ENGINEERING NEWS-RECORD

Panama Canal defense requires speed on Army housing designed for the tropics

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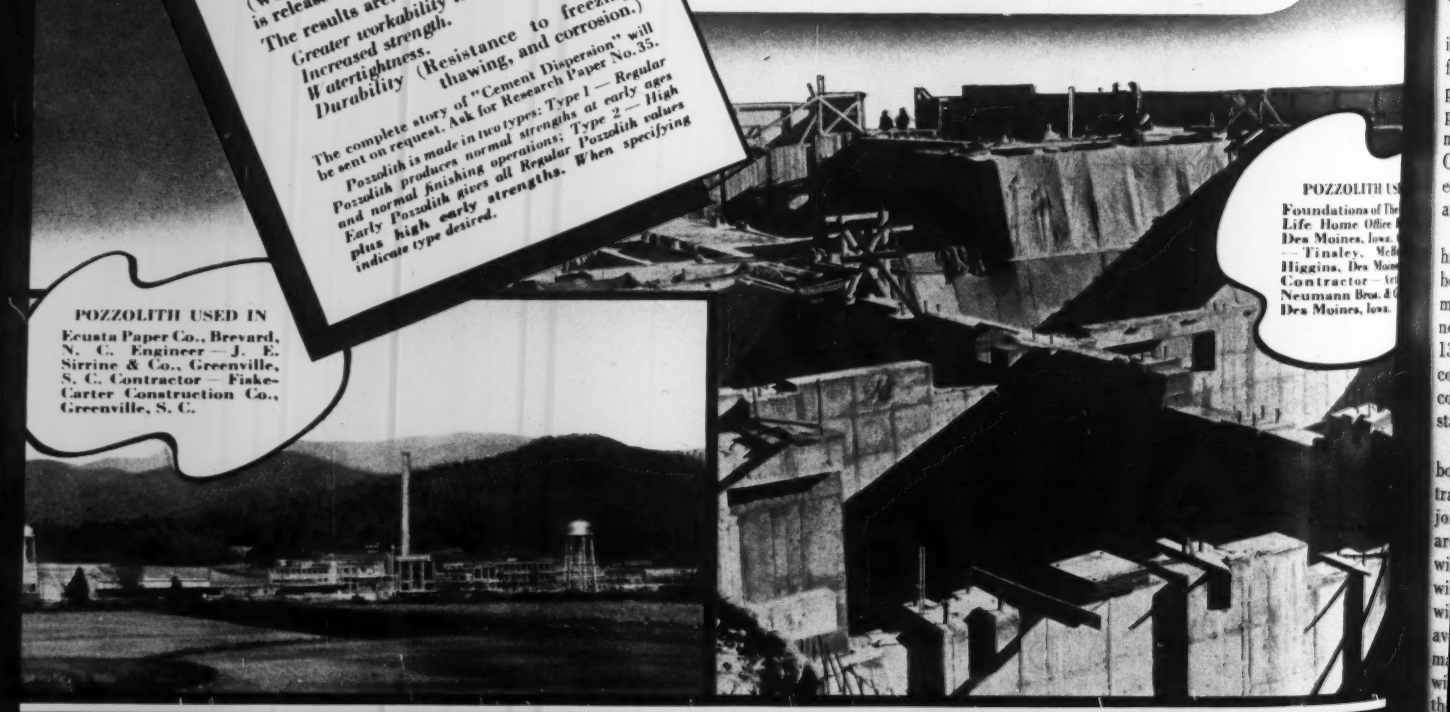

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MASTER BUILDERS

The Week In Engineering and Construction

ENGINEERING NEWS-RECORD • MARCH 6, 1941

Negotiated fee contract dropped by Q.M. Corps

Construction division of the Quartermaster Corp of the Army abandons negotiated contracts and will take competitive bids from selected contractors

Abandonment of its current practice of negotiating construction contracts and the substitution of a modified form of competitive bidding was announced by the Brig. General Brehon B. Somervell, head of the construction division of the Quartermaster Corps of the Army on March 4. On most future work the division will resort to competitive bidding, bids to be taken from a group of contractors selected by the advisory board of civilian engineers that heretofore has selected the contractors for the negotiated contracts. Calls for bids will not be advertised.

The change in policy doubtless arises in part from attacks in Congress on the fee system. However, the more significant point is that the first rush program of preparation for a draft army is now mostly under contract. Quartermaster Corps has some 239 construction projects finished or under way, while only about 13 remain to be awarded.

The prime reason for the fee contract has always been the desire to get started before plans are complete enough to permit intelligent bid preparations. It is now believed that some of the remaining 13 projects and most of those which will come along in future programs can be completely designed before they are started.

Procedure will be for the advisory board to choose from its files those contractors in the neighborhood of a given job who appear best qualified and who are available—not already overloaded with work. The number of firms picked will vary with conditions; and an effort will be made to invite enough bids to avoid danger of collusion—perhaps as many as a dozen or more. These firms will be given enough time, varying with the size of the job, to prepare a bid, and the contract will go to the low bidder. The contract to be awarded will in general follow the standard governmental lump-sum form.

Still in doubt is the question what to do about the possibility of rising labor and material cost. Consideration is being given to inclusion of an escalator clause.

Aid for defense roads put on a 60-40 basis

The roads committee of the House of Representatives has drafted a bill putting into effect the recommendations on defense roads made by the Public Roads Administration in its report to the President (*ENR*, Feb. 20, p. 289). The report recommended that the federal government increase its contributions for roads of the strategic network to something more than the 50-50 basis now used on federal-aid roads but did not set the amount. The bill tentatively sets the ratio at 60-40. In general, it follows the PRA report very closely.

Mass production for Panama Canal defense housing

The urgent need for housing facilities to quarter the increasing Army forces in Panama has resulted in the Constructing Quartermaster adopting the newest mass production methods and applying them to building activities. In the illustration above we see this method being applied at Howard Field by T. McClure and Thompson Markham, contractors.

Concrete forms are made of plywood in stock sizes, assembled and numbered, and moved from building to building as fast as the concrete has set. Carpenters string the roof rafters and move on to the following unit. Roofers then apply tar and prepare the way for the roof tile workmen. By the time the tile is being laid the interior walls and inside partitions are rising into place and plasterers are smoothing on the interior finishes. A coat of paint is applied, plumbing and electrical fixtures installed, and sewage, water, electricity and phone connections made with the street mains while work begins on roads, walks, drainage and grading.

The average barracks building costs approximately $90,000; and unit housing, including utilities and recreational facilities, amount to practically $900 per person.

Permanent barracks of the 100 to 200 men capacity type; officers' quarters; and two-family non-commissioned officers' quarters are in the process of mass production under the guidance of Maj. T. R. Howard, assistant quartermaster in charge. Maj. Howard is aided by Capt. H. E. George, Lt. O. J. Miller of the Quartermaster Corps and a staff of 42 civilian employees.

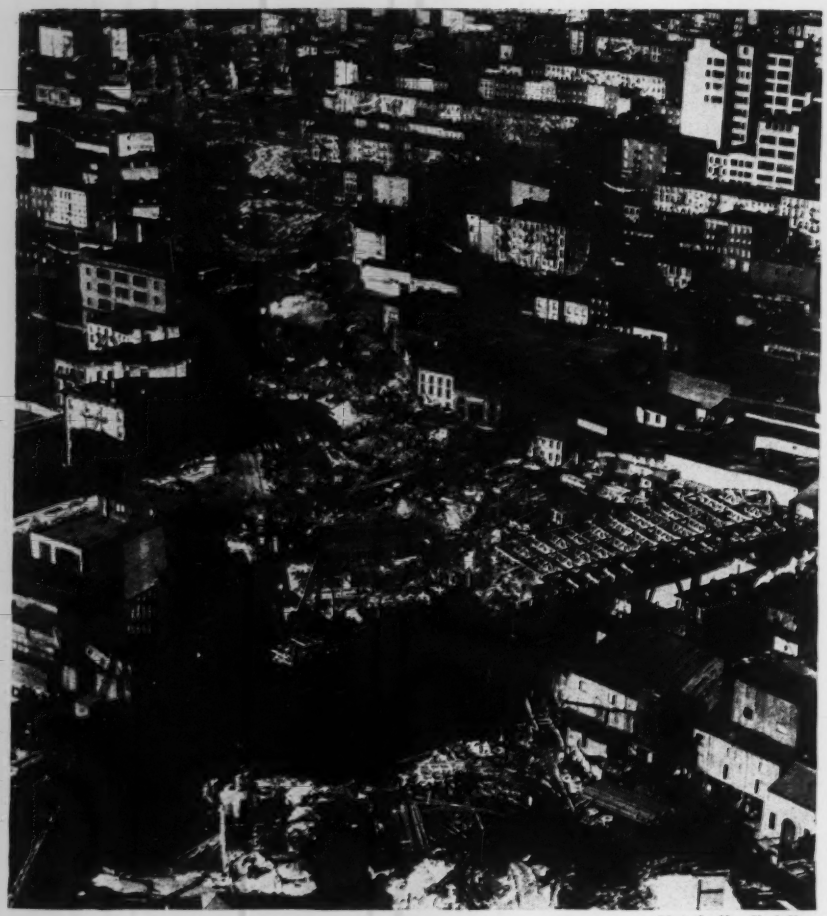

Photo by New York News

Record size cofferdam frame completed

On special ways in the right foreground is a 205-ft. by 44-ft. two-ring cofferdam frame, believed to be the largest such device ever launched. The frame will form the cofferdam for a skew bridge pier which will carry two separate leaves of a skew bascule bridge on Hamilton Ave., Brooklyn, with a 42-ft. wide roadway and 8-ft. sidewalk on each side and will provide an open space between leaves of 36 ft. which will accommodate the control house. A matching 36-ft. mall separates the 50-ft. wide approach lanes of widened Hamilton Ave. and in the mall will be located the supports, with batter leg steel towers, carrying the six-lane Belt Parkway high level approach to the Battery-Brooklyn Tunnel.

Increased width of the new Hamilton Ave. artery is shown by the demolition extending to the top of the picture. Pile drivers may be seen putting down pipe piles required for almost the entire length of the structure.

The P. T. Cox Const. Co. of New York City has a $1,910,000 contract for the piers on this work and the entire improvement from the Battery-Brooklyn Tunnel to Owls Head Park will cost about $11,000,000.

Oklahoma settles Grand River Dam dispute

An agreement has been reached between Oklahoma's Governor Phillips and federal officials, which brings to a close the long standing dispute over roads and bridges in the Grand River Dam area.

Governor Phillips had declared that the Grand River Dam Authority and the federal government should pay the state $889,000 for flood damages to highways and bridges due to the building of Grand River Dam. On the other hand, the government contended that building of the bridge near Grove, Okla., fulfilled its agreement with the previous state highway commission.

A forerunner of the agreement was Governor Phillips' order, filed Feb. 22, revoking the order which placed the dam under martial law. National Guardsmen had been sent to the dam previously but were withdrawn after a three-judge federal court restrained the Governor from interfering with the closing of the dam nearly a year ago. The three-judge order was later set aside by the U. S. Supreme Court and the case ordered back to trial before a one-judge federal court.

Final settlement of the dispute was based on the followed stipulations: (1) Revocation of the martial law order of Governor Phillips, issued Mar. 13, 1940; (2) dismissal of the federal suit to enjoin Governor Phillips from interfering with completion of the dam; (3) dismissal of the state's suit to prevent completion of the dam and inundation of the highways; (4) an agreement for a $1,936,400 federal-state road-building program in the Grand River Dam area with the federal government paying $689,950 through the Public Roads Administration and the WPA. It also provided that WPA furnish an additional sum of $438,000 for other road projects.

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Gate Bridge insurance cuts may reduce tolls

Proposed changes in the operating program of the Golden Gate Bridge at San Francisco would cut costs enough to permit reducing the basic toll rate from 50c. to 40c. A major factor in the proposed changes is the recent cancellation of one-fourth of the $10,000,000 insurance that has been carried on the bridge.

When the bridge was completed, insurance coverage could be obtained for only one-half the "insurable value." The recent cancellations (which are in line with cancellations elsewhere since the Tacoma Bridge collapse) so reduce that coverage that one of the directors of the Golden Gate Bridge & Highway District has suggested that the board cancel the remaining insurance and transfer into the general operating fund the entire $69,000 that has been annually allotted to insurance premiums. For three years a $79,000 annual maintenance reserve has been set aside out of operating revenues but, according to Russell G. Cone, engineer of the district, only a very small part of this reserve has been used to date. With this maintenance reserve discontinued, with the district carrying its own insurance and with some lesser economy items, the proposed toll reduction could be made on the present bridge income, Cone said.

Directors of the district are considering the advisability of combining in a single position the offices of general manager and chief engineer, now held separately, with salaries, respectively, of $7,500 and $7,200 annually. In making such a move the board would have to decide whether the chief engineer is to be a "civil engineer." If so, under the California law he would have to be licensed as such.

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More new construction provided in fourth defense appropriation

Fourth Supplementary Defense Appropriation Act includes funds to complete present cantonment program and to plan housing for a much larger army

Nearly $850,000,000 for construction is included in the Fourth Supplemental Defense Appropriation, which passed the House last week. Items in the bill are nearly all included in Presidential estimates previously reported. An exception is $15,000,000 which the bill would give to the Quartermaster Corps to finance engineering studies of future cantonment programs to avoid the confusion which has attended the present one. Though it is not officially so stated, this sum would cover most of the engineering on shelter for the 4,000,000-man army which has always been contemplated by the War Department as the wartime force.

Existing cantonments

To complete the existing cantonment program (ENR Feb. 20, 1941, p. 297) the bill provides $338,000,000, and for additional facilities at existing cantonments—theatres, streets, chapels, etc.—$236,000,000 is included. Also going to the Quartermaster Corps is $44,000,000 to complete present work at airfields and for the Panama garrison. For a number of new projects, including a $9,244,000 acceleration of the Alaskan Army airbases and a $7,500,000 start on storage works at the San Francisco Port of Embarkation, $25,199,000 is appropriated.

For public works of the Bureau of Yards and Docks, the bill provides $189,000,000 in cash and contract authorizations. This covers a wide range of work, of which only about $8,000,000 is at the new Atlantic bases. Biggest project is a $35,000,000 fleet anchorage at Puerto Rico.

Army to stock lumber

The Army is moving to acquire a stockpile of lumber in order to prevent price rises if another sudden demand should arise such as was created by the cantonment program. The plan contemplates immediate purchase of some half billion board feet on competitive bids. The Army will not take immediate delivery; manufacturers agreed at meetings last month to manufacture and store the lumber and will be paid when the Army takes delivery. Stockpile lumber will not be used to meet current demands, which will be handled in the usual way.

No provision is made for reimbursing the lumber suppliers for the cost of holding the lumber. This reinforces indications previously pointed out in these pages that a further expansion of the Army, necessitating a new cantonment program, is contemplated.

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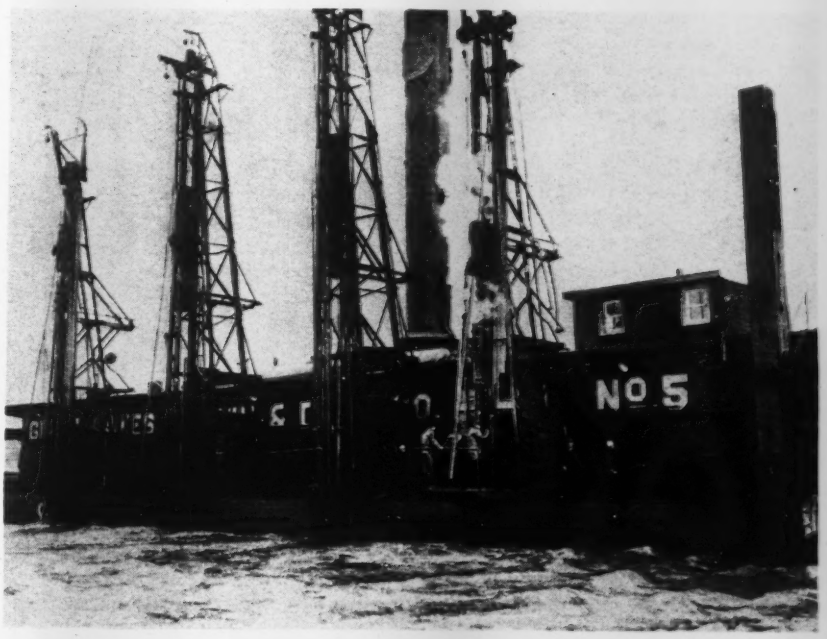
Earnest Bateman Black to head branch of Q.M.C.

Earnest Bateman Black, senior member of the consulting engineering firm of Black & Veatch, Kansas City, Mo., has been appointed to head the water engineering branch of the Quartermaster Corps, U. S. Army. Water supply systems of all projects constructed by the Quartermaster Corps will come under his direction. Mr. Black served as captain and major in the air service, aircraft production, U. S. Army, 1917-1918, was chief engineer for the War Credit Board, engineer of Section B, Construction Division of the Army, and directed construction of cantonments during World War No. 1. He is a graduate of the University of Kansas in civil engineering.

Ray E. Lawrence, also of Black & Veatch, will become Mr. Black's executive assistant. Mr. Lawrence was formerly Kansas state director of the PWA, an engineer for the Kansas State Board of Health and assistant professor of civil engineering at the University of Kansas.



Deepening a channel on the Delaware for Navy's big ships

To provide ample depth for American Navy ships along the Delaware River from the Philadelphia Navy Yard to the sea, the U. S. Engineers are deepening the present 35-ft. channel to 40 ft. The work involves the removal of about 30,000,000 cu. yd. of sand, gravel, clay and mud and 165,000 cu. yd. of ledge rock with much of the work performed by government seagoing hydraulic hopper dredges and by leased hydraulic pipeline dredge. The rock area covers a 4-mile stretch of channel from near Eddystone, Pa., to a point off Marcus Hook, Pa. The contract for removal of 17,500 yds. of the rock is held by the Great Lakes Dredge & Dock Co.; the remaining rock work will be contracted for at an early date.

One of the drill boats used by Great Lakes on their contract is the one shown above or Drillboat No. 5. It is 145.7 ft. long, has a 38-ft. beam, an 8-ft. depth of hull, and is equipped with four 13-ton steel spuds 75 ft. long, two drill frames 57 ft. high, and two drill frames 53 ft. high, the frames sliding on tracks. The boat can drill 16 holes on 6-ft. centers at a single set-up, and the drilling machines are steam hammer operating. The drills are of 3 in. diameter hollow steel bars 59 ft. long with detachable bits. Facilities provide for cleaning drill holes by 100 lb. of air pressure or 175 lb. of water pressure. Steam for the drilling operation is supplied by two Scotch marine boilers each having 150-psi.

Engineering Adds to Perfection of New National Gallery of Art

A gift to the American people by the late Andrew W. Mellon, the National Gallery of Art, Washington, D. C., will be officially opened and accepted for the Nation by President Roosevelt on the evening of March 17. Though conforming in outward appearance to the classical architecture of the nation's capital, there is concealed behind the marble walls of the new structure the most modern facilities that engineering skill can provide for conditioning the air in which the treasures of the gallery are to be maintained.

Plan of the building is a long rectangle crossed near the ends by two smaller rectangles and crossed again at its middle by a still smaller rectangle ending in columned porticoes. It is essentially a one-floor system of exhibition space. All administrative offices, mechanical equipment, storage rooms, minor galleries for temporary exhibitions, auditorium, cafeteria and kitchen, work rooms, etc., are provided for on the ground floor just below the main gallery floor.

Size of the building is 782x303 ft., exclusive of steps and approaches. This length is slightly more than the length of the Capitol, including its House and Senate wings. The main floor area is 179,000 sq. ft. with a picture gallery of 126,000 sq. ft. Breaking the long East-West axis are two garden courts, measuring 76x106 ft., arched over with glass. Surrounding the garden areas are monolithic columns 3½ ft. in diameter and 26 ft. high. The roof is topped by a dome 101 ft. in diameter and 103 ft. above ground level.

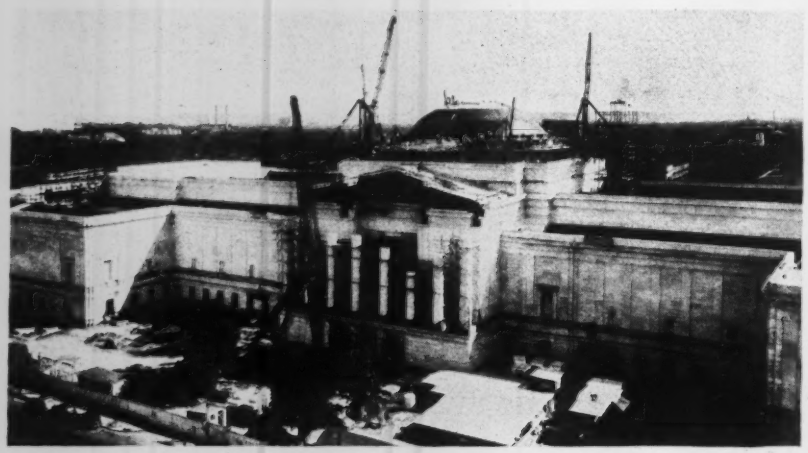
A central rotunda, main focal point of the plan, under the dome is reached through north and south lobbies, these being entered from porticoes on the Mall, and on Constitution Ave. opposite Sixth St.

All machinery on the ground floor is insulated from the structural frame; lead, cork and rubber were used for cushioning. Pipes in the heating, refrigeration, water supply systems and the lighting conduits are not imbedded in the basement floor, but are supported on structural steel racks for ease of maintenance.

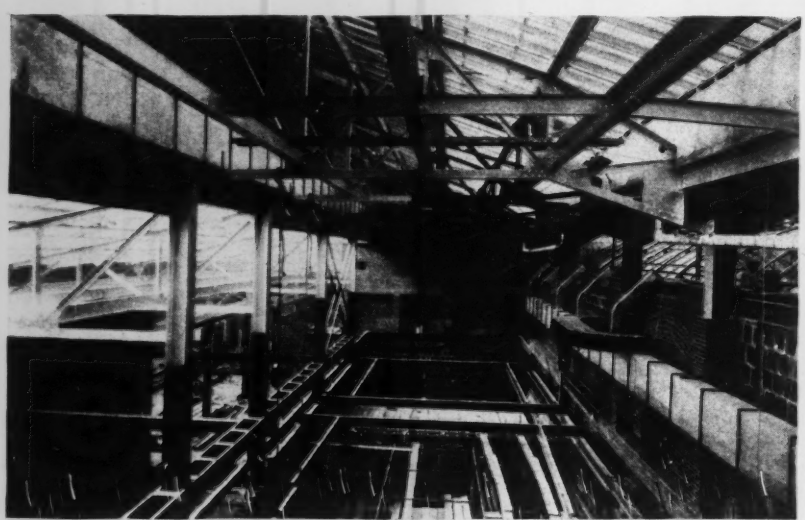
Air conditioning is furnished by 21 units, with ducts located in the walls. The steel frame was designed to permit ventilating ducts to be located between the skylights and the glass of the gallery ceilings. Air is changed by 28 supply and exhaust blowers, with a capacity of 700,000 cu. ft. of air per min.

Due to site conditions it was necessary to place the basement level a little below the recorded high water level of the Potomac River. Pumps have been installed in the basement and will operate by diesel engine, automatically controlled for emergency use in case of floods.

The building was designed by the late John Russell Pope and his associates—Otto R. Eggers and Daniel Paul Higgins, architects; James M. Allen was architect's supervisor; Vermilya-Brown Co., Inc., builders; Clyde R. Place, consulting merchanical engineer, and H. G. Balcom Associates, structural steel, concrete and foundation engineers.



Faced with 800 carloads of pink Tennessee marble in 26 shades, the exterior was nearing completion in Sept. 1939. The building was completed in November 1940.



The structural frame was so designed as to permit the installation of ventilating ducts in the space between skylight roof and ceiling lights of the galleries below as seen at right and upper left in this illustration.

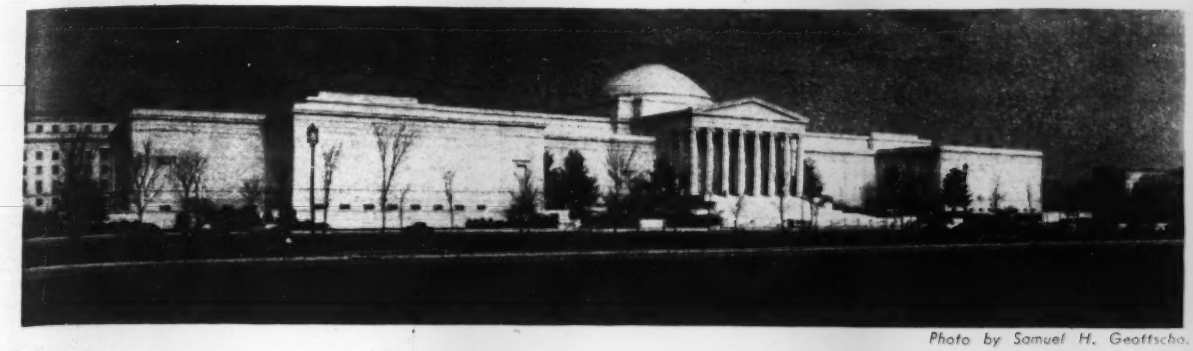
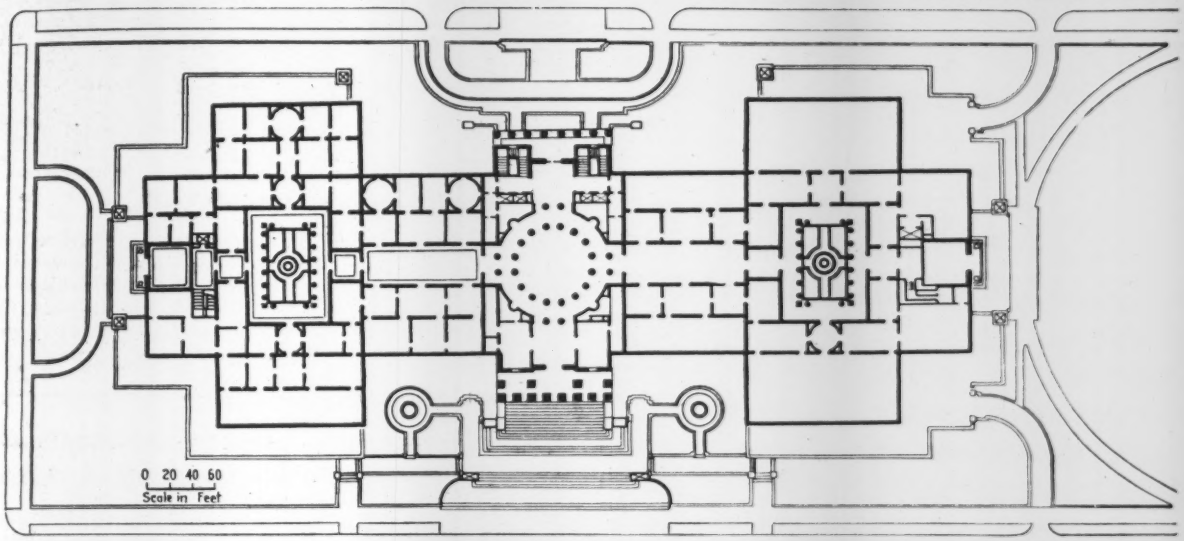
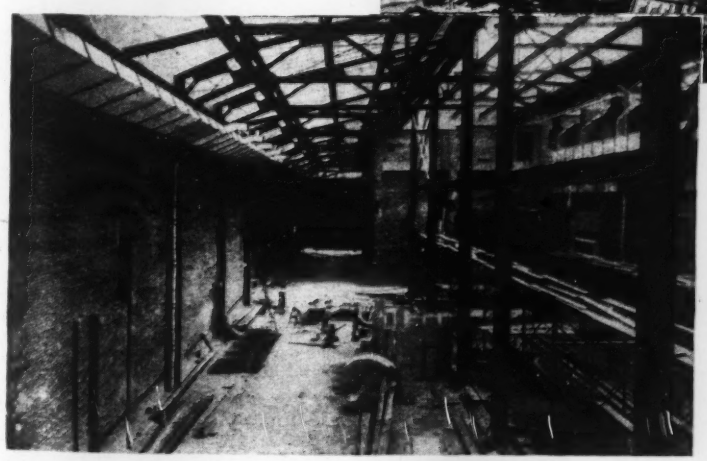


Photo by Samuel H. Geottscho.



Plan of the principal exhibit floor of the new art gallery. At the top is main facade of the 792-ft. building as seen from the Mall.

Built over the old Tiber Creek bed, the foundation required the driving of 6,800 piles. This view shows capping of the piles in December 1937.



Skylights above the galleries provide daylight illumination, which is adequate for 85 percent of the time the gallery is open for exhibition. A system of controlled lighting for individual subjects supplements the natural daylight.

Photo by Fairchild Studio

Camp Shelby sewage disposal plant nears completion

Designed to serve an encampment of 60,000 men, Camp Shelby's activated-sludge sewage treatment plant nears completion at Hattiesburg, Miss. To care for peak load, the plant is designed to handle a 12,000,000 gal. daily flow. In the left foreground, illustration above, are shown the sludge-drying beds; beyond, in sequence, are the chlorinator tank, final settling tank, aerators, comminutors, and primary settling tanks. The large circular tanks in the background care for primary and secondary digestion of sludge from the plant. This modern sewage disposal unit is being built at a cost of $350,000. Lockwood, Greene, Inc., New York, N. Y., are engineers, and J. A. Jones Construction Co., Charlotte, N. C., are general contractors for the Camp Shelby project.

Municipal facilities studied at defense areas

Surveys of municipal facilities in 60 areas where defense activity is contemplated are being carried out to make sure that there is adequate sewage disposal, water supply, and school and recreation plant facilities, according to Frank Bane, director of the division of state and local cooperation of the National Defense Advisory Commission.

Thirteen city managers, loaned by their cities, have been sent to survey areas where a lack of defense-connected community facilities might impede national defense. This survey, to be completed within 30 days, was launched at a meeting called by the division in Washington Feb. 21.

When adequate facilities are lacking, studies will be made to find if the state has resources to meet the needs, and if not, what amount of federal funds are necessary. This survey follows President Roosevelt's request to Congress, Feb. 24, for an appropriation of $150,000,000 to be used to help towns where the population has been increased greatly by the influx of defense workers, and to provide proper sanitary facilities. (See *ENR*, Feb. 27, 1941, p. 307).

Defense areas are divided into two general categories, those in which there are defense industries, and those adjacent to military concentrations. Information on problems confronting many of these areas has already been gathered by regular field representatives of the Division of State and Local Cooperation. The temporary consultants are working under the direction of the division's regular field staff.

Federal agencies represented at the conference were: U. S. Office of Education, U. S. Public Health Service, U. S. Public Roads Administration, the Federal Works Agency, and the Defense Coordinator for health, welfare, recreation, and related defense activities.

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Power from Santee-Cooper due October

Progress on the $50,000,000 Santee-Cooper hydro-electric and navigation project, rising above the adjacent swamp lands 35 mi. north of Charleston, S. C., insures production of power by mid-October, according to Robert M. Cooper, general manager of the project.

Construction work was begun in March, 1932 on the 193,000-acre site. The Santee River reservoir contains approximately 155 sq.mi. (*ENR*, Nov. 13, 1940, p. 650).

The upper dam will be 7-mi. long, including a 3,400-ft. spillway, and the lower dam 2-mi. long. Manager Cooper states that he plans to complete the Santee River Dam by July 1, and generation of power should start not later than Oct. 15.

The project is being built by the South Carolina Public Service Authority with F. R. Sweeny as chief engineer.

Latest road machinery studied by U. S. Engineers

Latest model road construction machinery and equipment is being studied by the U. S. Engineers to provide adequate training for army personnel in modern road construction technique and materials.

Plans are being made for procurement of new items of mobile construction equipment and plants, which may be issued for temporary army field training. It is anticipated that this equipment will be issued to the General Service Regiment in each of the four armies and to units of the Engineer School and the Engineer Board, at Fort Belvoir, Virginia.

Since much of the specialized road equipment is bulky and ponderous, it is probable that it will not become organic equipment for the General Service Regiments, but rather will go to the Army Park Battalion, a unit scheduled to be organized soon. An equipment company in this battalion will have custody and maintenance of the equipment and will issue it as required, together with skilled operators.

Officers of the U. S. Engineers who have had long experience in road construction and maintenance will be assigned to the General Service Regiments and as instructors at the Engineer School and Replacement Center. In connection with study of field equipment, there will also be a study of bitumens and soil stabilization.

Drinking water standards to be revised by U. S.

Appointment of a special advisory committee of representatives from federal and scientific organizations to study the revision of drinking water standards is announced by Surgeon General Thomas Parran of the U. S. Public Health Service. The present standards, first promulgated in 1914 and revised in 1925, will be changed "to conform more closely to current requirements for water supplies."

A subcommittee of Public Health Service officers has been designated to prepare tentative suggestions for changes in the present standards, and these will be submitted for the consideration of the advisory committee.

The membership of the advisory committee is as follows: A. M. Buswell, chief of the Illinois State Water Survey Division, Urbana, Ill.; Abel Wolman, professor of sanitary engineering, Johns Hopkins University, Baltimore, Md.; Arthur E. Gorman, Bureau of Engineering, Department of Public Works, Chicago, Ill.; Charles R. Cox, chief of the Bureau of Water Supply, State Department of Health, Albany, N. Y.; A. C. Hunter, principal bacteriologist, of the Food and Drug Administration, Federal Security Agency; Arthur D. Weston, director and chief engineer, Division of Sanitary Engineering, State Department of Health, Boston, Mass.; J. W. Sale, senior chemist, food division, Federal Security Agency; W. D. Collins, chemist in charge, U. S. Geological Survey; R. C. Bardwell, superintendent of water supply, Chesapeak & Ohio Railroad, Richmond, Va.; R. F. Goudey, sanitary engineer, Bureau of Water Works and Supply, Los Angeles, Calif.; R. E. Buchanan, director of Agricultural Experiment Station, Iowa State College, Ames, Iowa; Herman G. Baity, professor of sanitary engineering, University of North Carolina, Chapel Hill, N. C.; Joseph W. Mountin, assistant surgeon general, Domestic Quarantine Division, of the U. S. Public Health Service is chairman of the advisory committee, while J. K. Hoskins, chief of the sanitation section, Domestic Quarantine Division, U. S. Public Health Service, will act as secretary.

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Canada Curtails Public Works Program

Federal expenditures on public works in Canada for the current year, 1941-42, are to cost only $11,735,809, a drop of about three million dollars from last year's total, which was a reduction in itself from normal expenditures. Estimates tabled recently in the federal House of Commons show that expenditures by the Department of Public Works on public buildings, and navigable waters, are to be reduced all across the Dominion in line with the conservation of Canada's financial resources for the war effort.

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Large Flow of Water Met in Carlton Tunnel

Water that reached a maximum flow of 20,000 gpm. was encountered in the Carlton drainage tunnel, Cripple Creek, Colo., on the morning of Feb. 20 and driving of the tunnel has been discontinued until the flow reduces to an amount that can be handled by the tunnel driving crew.

The tunnel is being driven by the Golden Cycle Corp. to drain deep workings of the world-famous gold mines of the Cripple Creek district (*ENR*, Nov. 7, 1940, p. 618). It is unlined except at the portal, 10x11 ft. in size, and ultimately is expected to be six miles long. The work has been notable for the fast rate of driving.

At the time the large flow was encountered the bore had been driven about five and one-half miles (28,970 ft.) and the heading crew were working in the famous Newmarket fault and below the flooded Ajax mine. A shot fired at 8 a.m., Feb. 20, revealed bad, blocky ground that necessitated timbering. Timbering operations continued all day and at 5:30 p.m., John R. Austin, superintendent, after inspection of water conditions at the face, ordered the men to abandon the tunnel. Before they had left the flow had risen to about 800 gpm. and by 1 a.m. the following morning it had reached a flow of 20,000 gpm.

The flow came largely from the Ajax mine, 500 ft. above the present heading of the tunnel. The 600-ft. depth of water in that mine was completely drained by Feb. 28, at which time the flow had reduced to 11,400 gpm., and the Cresson and Portland mines were beginning to drain a little. The work of retimbering and cleaning the tunnel started March 3, but drilling operations will not be resumed until the flow is down to around 7,000 gpm., possibly in a week or ten days.

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E. I. du Pont again sets building safety record

The E. I. du Pont construction forces Dec. 27 established an all-American safety construction record at the smokeless powder plant job being erected near Memphis, Tenn. Following up this outstanding achievement, du Pont has broken its own safety record and established a new all-time high safety record at the Charlestown, Ind., powder plant. As of midnight on Feb. 20, more than 3,650,000 man-hours had been worked without a single time-losing injury. This eclipses the former 3,000,000 non-injury hours record at the Tennessee plant and far overshadows the previous all-American construction record of 1,929,428 hours.

Photo by Thos. J. Barbre

Inspecting the Carlton Tunnel at the peak of the flood. Left to right, John G. Farmer, engineer on the tunnel, Robert W. Welch, master mechanic, and John R. Austin, superintendent. A flow of 20,000 gpm. on Feb. 21 dropped to 11,400 gpm. on Feb. 28, and in the seven days a 600-ft. depth of water had drained out of the Ajax mine.

BUSINESS and

MUCH IMPORTANT BUSINESS was transacted at the recent annual convention of the Associated General Contractors, Feb. 17–20, in Houston, Tex., but the 900 delegates also took time off for

DAN KIMBALL (left) new vice-president, and M. W. WATSON, incoming president, hear advice from outgoing president PAT ZACHRY.

Left: Only Pittsburgh can produce a scotchman with a smile like this. ROY MACGREGOR chuckles over the way his heavy and highway contractor labor agreement has worked out in the face of dire predictions two years ago.

JOHN P. COYNE (right) president, building and construction trades department, A. F. of L., meets with E. P. PALMER (left) and J. D. MARSHALL of the A.G.C. labor relations committee.

Right: RUSSELL NIX, chairman of the convention, saw to it that everyone had a good time.

Left: PAT ZACHRY, retiring A.G.C. president, smiles down on MAJ. GEN. JULIAN SCHLEY, chief of engineers, U. S. Army, and one of the contractors' best customers.

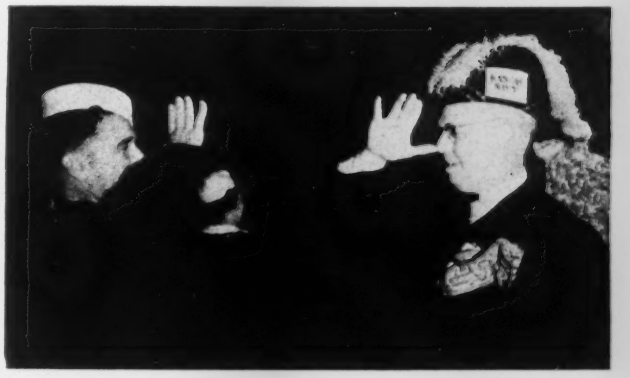
O. B. COBLENTZ (left) retiring chairman of the heavy division, talks it over with WALKER R. YOUNG, assistant chief engineer, U. S. Bureau of Reclamation. That's LESTER ROGERS in the background.

H. K. BISHOP, chief of the construction division, U. S. Public Roads Administration, and good friend of the contractors, tells the highway division additional money is needed for military highways.

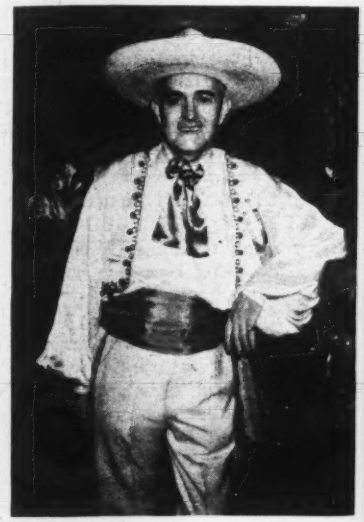
Two prominent Houston contractors, S. BAILEY HOUX and W. S. BELLOWS, were on hand as official hosts.

FUN at the A.G.C. convention in Houston

relaxation and fun during the four nights the meeting was in session. These views show various members and their guests in characteristic poses as snapped by ENR's western editor.



Deckswabber MILLER of the "Kansas Navy" salutes his chief, "Admiral" WATSON, chosen to head the dry-land fleet because of his distaste for water.



Genial CHUCK NEWELL, hard-working secretary of the Texas Highway Branch, A.G.C., took charge of wild-west activities at one of the night sessions.

BELLE DENNIS, Portland, Ore., only woman chapter secretary in the A.G.C., and HARRY DICK, her chapter president, dress up for an evening session of the convention.

Below: A cockeyed look and a red neckerchief make a Sioux City cowboy out of BILL KLINGER. He doesn't look like a former A.G.C. president.

The convention may have been in Houston, but Kansas made more noise and created more attention than did the Texas boys. Here Kansas secretary BILL BALLARD flaunts his new flag in the face of the other 47 states at the banquet.

TONY HORST, former A.G.C. president, tries to disguise that Philadelphia appearance with a cowboy shirt.

Below: ED MANSFIELD of Bandera, Tex., greeted the first contractor to enter Texas, and came down from the hills to head up some wild west entertainment for the convention.

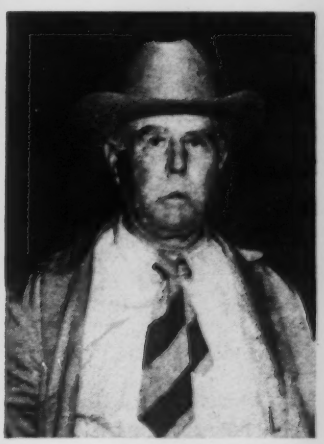


Photo by A. E. Stewart

New Orleans completes 122 brick houses under U.S.H.A.

Ready for occupancy this week, the St. Thomas Street Housing Project at New Orleans is the second low-cost housing development to be undertaken by the city. There are 122 brick dwellings containing 970 family units which will be occupied by white persons; the first housing project to be completed recently was designed for negro use. (E.N.R., Jan. 23, 1941, p. 143.) Costing $3,700,000, this project was constructed by the New Orleans Housing Authority in cooperation with U.S.H.A. Work was started on July 17, 1939, and the contract was held by Henry Ericsson Co., contractors of Chicago, Ill.

More power for defense on Pacific Coast

The Federal Power Commission, Feb. 20, placed its stamp of approval on a $30,000,000 power project to be constructed on the Feather River, 30 mi. from Oroville, northeast of Sacramento, Calif., by Pacific Gas and Electric Co.

The program calls for construction of two hydro-electric plants, which it is estimated will cost $22,000,000, and $7,000,000 will be spent on transmission lines. This new construction will be the last major step in a $50,000,000 construction program started several years ago by P.G.&E., and the two plants, known as the Pulga and Cresta, will have a combined total of 203,000 hp., which the company declares will be sufficient to meet any power requirements for the region until the spring of 1945.

Under terms of the construction and operation license issued by the Federal Power Commission, the company is directed to start work on the Cresta development in one month and to complete it by Jan. 1, 1943, and the Pulga plant is to be started in six months and completed by July 1, 1943.

It was considered imperative by the commission to license the Feather River construction because of existing uncertainties as to when the Shasta Dam power plant of the Central Valley water project will be able to supply its share of the power load in this area.

Frank W. Clark, Director of Public Works, in Sacramento, expressed the opinion that the federal commission's action indicated the serious need for the earliest possible completion of Shasta Dam. "This can be accomplished only by the immediate authorization of a supplemental appropriation of approximately $25,000,000 to assure carrying out the program," said Mr. Clark. The $25,000,000 supplemental fund, however, does not mean an actual $25,000,000 increase, but merely that a greater proportion of funds would be spent this year rather than spreading it over 1941 and 1942.

The $50,000,000 program of P.G.&E. includes three steam-operated generating plants on the bay shore in Contra Costa County with a combined output of 60,000 hp., representing a cost of $15,000,000. Of the three plants the one at Avon has already been put into operation, the Martinez and Oleum plants are still under construction, and work is also in progress on a 28,000 hp. hydro-electric plant at Dutch Flat in Placer County.

P.G.&E. is spending $1,000,000 on a sub-station at Piedra in Fresno County and another million on the enlargement of a sub-station at Magunden, Kern County. Transmission and distribution facilities are being extended and strengthened in nearly every part of the system.

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Largest Navy Graving Dock for Bayonne, N. J.

A naval base to cost $16,477,000, which is to include the largest graving dock ever built in the U. S., is to be constructed at Bayonne, N. J.

Site for the Bayonne project obtained through condemnation proceedings Feb. 20, comprises 153 acres. The price paid by the government for the land was $2,837,000. It is estimated that the cost of the drydock will be $8,600,000, and a supply terminal will cost approximately $5,000,000.

The new base will be under command of the Commandant of the Third Naval District, and its activities will be coordinated closely with those of the New York Navy Yard, Brooklyn, N. Y. The dock will be sufficiently large for the new 45,000-ton battleships. It is understood that the Bayonne development will not affect proposed additions for the Brooklyn yard.

Contract for construction of the drydock at Bayonne has been let to George H. Flinn Corp. and Great Lakes Dredge & Dock Co., New York City.

In addition to the new base facilities at Bayonne, the Navy Department has announced that it had entered into a contract with the Westinghouse Electric & Mfg. Co. for the construction and equipment of an ordnance manufacturing and assembly plant near Canton, Ohio. The estimated cost of this plant is $16,150,000.

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Bombproof roof for Ford plant

Engineers for the $21,000,000 Ford Motor Co.'s aircraft engine plant, now under construction at Dearborn, Mich., have provided a bombproof roof of reinforced concrete to protect the vital first floor from air attack damage.

Overhead protection will be 22 in. of reinforced concrete, while service tunnels carrying electrical conduits—"lifeline" of the plant—will be buried underground beneath a 12-in. layer of steel and concrete.

It is understood that studies made in England show that bombs now in use cannot penetrate such protection. Ford engineers estimate that the first floor should be secure against critical damage from any but the most prolonged air attack.

Prefabricated demountable houses for defense needs looked on with favor

PBA now awarding contracts for prefabricated houses on Indian Head, Md., project which will serve as testing laboratory to determine future use.

The prefabricated demountable house program which defense housing coordinator Palmer is pushing seems finally to be moving forward. Public Buildings Administration is now awarding contracts for prefabricated houses to go in the Indian Head, Md. project. As pointed out last year (*ENR* Dec. 12, 1940, p. 786), this project is to be a laboratory of prefabrication, with a number of types of houses and perhaps of contract arrangements being tried. First contract went to E. F. Hauserman Co. of Cleveland for 20 houses to cost $61,752. Hauserman, a manufacturer of steel office partitions, is furnishing sheet steel panels insulated with rock wool. A few days later contract for 50 houses of the Homosote insulating board type went to Allied Housing Associates of Langhorn, Pa., for $134,600; Home Building Corp. of Kansas City, Mo., is to furnish 50 plywood houses at $127,000; and Tennessee Coal, Iron & Railroad has a contract for fifty of its steel houses at $138,900. Standard Houses Corp. of Chicago will build 50 plywood houses at a cost of $141,550.

All of these contracts provide that the manufacturers erect the houses themselves; prices are for a house in place. This is a change from the original plan that houses be erected by a general contractor. Streets and utilities at Indian Head will be installed by George Hyman Construction Co. of Washington under a fee contract estimated at $469,500 and carrying a fee of $25,000.

Prefabricated housing has presented a new problem to government construction agencies, and there have been long delays in achieving a meeting of minds between the government and the fabricators. The price question has been difficult; fabricators were long unwilling to commit themselves to prices and felt that they should be allowed the fee contracts used for conventional building. There has been considerable doubt about the adequacy of capacity for manufacture. The government requirement of demountability has occasioned difficulty to some fabricators. The fabricators, also, did not like the plan for erection by general contractors.

A further difficulty has been worry about the labor situation. At-the-site work is predominantly AFL, while most fabricators are either CIO or non-union. An exception is Hauserman, whose plant is AFL. He was the first to receive a contract.

During this period of uncertainty, several large jobs, notably San Diego, which were intended for prefabrication, were started as on-site jobs. There is a possibility that some of these jobs may now be switched back to prefabrication. Contractors have been asked to submit an inventory of their materials on hand and en route with the idea that they might cancel outstanding orders.

Meanwhile, in California, a contract has been let to provide 608 demountable houses at Vallejo for civilian employees of the Mare Island Navy Yard. A general contract for erection of these and of 316 permanent houses has been let to Engineers, Ltd., of San Francisco; a fee of $105,000 will be paid for the job, which is estimated at $2,985,000. The contractor will buy prefabricated houses of a type approved by PBA on sub-contract; $778,600 has been allotted for this purpose. What type will be bought has not yet been decided. Probably three or four types will be used.

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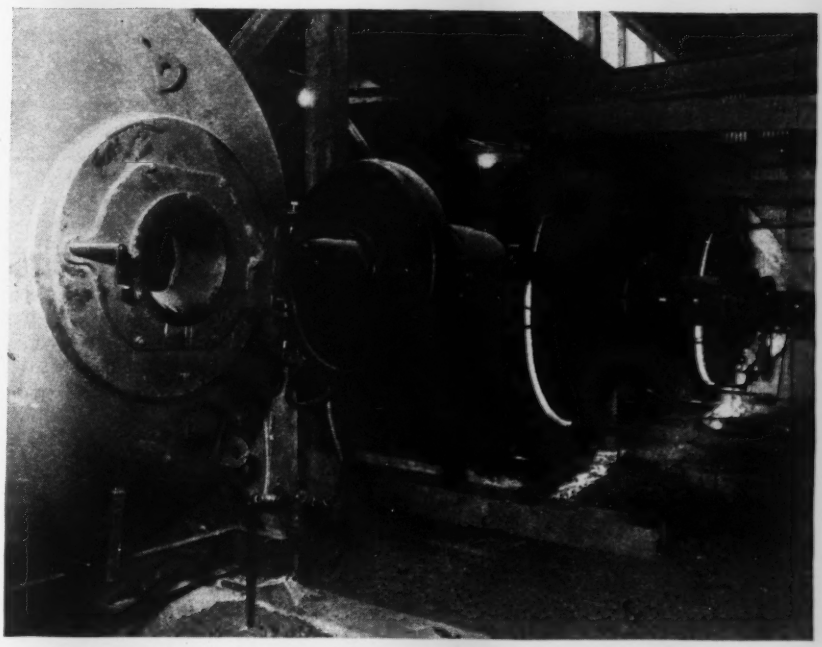
Concrete wall on road curves proposed

A bill which would require the Arkansas State Highway Department to construct a line of concrete 6 in. thick and 10 in. high in the center of roads around all obscure curves and over the tops of all view-obstructed hills has been introduced in the Arkansas legislature by Representative Pickering of Ashley County. This requirement would also apply on all new highway construction.

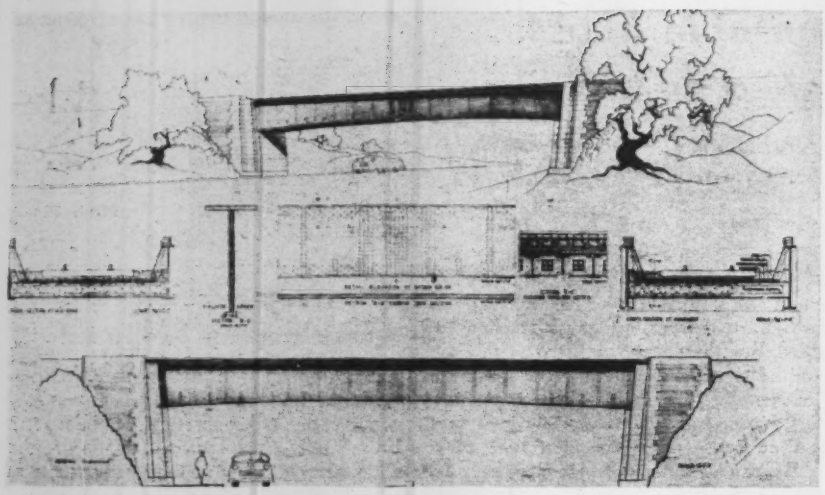


Oil burners to dry material for Mud Mountain Dam core

Preparatory to heating 425,000 cu.yd. of sand, gravel and unaltered till for the rolled impervious core of the $8,000,000 Mud Mountain dam in the White River canyon near Tacoma, Wash., three 1,000-hp. oil burners have been installed at the site by the Hurley Engineering Co. of Seattle under supervision of U. S. Engineers. They are now in operation heating earth for a test fill.

Materials for the core, transported by train from a borrow pit two miles from the dam site, pass through three large drums and are heated until their moisture content is reduced to the proper optimum to assure proper compaction. The burners, which will heat the core material, will consume approximately 330 gal. of oil per hour each, it is estimated, when operating at full capacity. A spray of atomized oil 7 in. in diameter is continuously fed into the firebox. Through the use of these burners it is estimated that the moisture content of the core material can be reduced to 10 percent; optimum for maximum compaction in the core.

The earth fill core will be 300 ft. thick at the base but only 90 ft. long, and will be 30 ft. thick at the top and 700 ft. long. It will be flanked by a transition zone of crushed rock and an outer zone of dumped quarry rock. Contract for the record size dam is held by the Guy F. Atkinson Company, of San Francisco, Calif.



Prize Awards in Student's Bridge Design Competition

American Institute of Steel Construction, New York City, has announced the prize winners in its annual students' bridge design competition. First prize of $200 went to Vincent W. SeeBach, New York University; second prize of $100 was awarded to R. Kenneth Kendall, Iowa State College, and third prize of $50 was won by M. R. Harrison, Jr., of Iowa State College. Honorable mention went to F. H. Hill, Virginia Poly. Inst.

The problem called for the design of a steel overpass bridge carrying a single track railroad over a highway. Sixty-four students from 13 colleges participated in the competition. The awarding jury consisted of: Shortridge Hardesty and Walter H. Weiskopf, consulting engineers; John T. Briggs and M. W. Del Gaudio, architects of New York City, and Theodore Reed Kendall, engineering editor of American City.

More engineers enter Tacoma bridge studies

Four engineers have been retained by Clifford E. Paine, technical adviser to the Narrows Bridge Loss Committee, to advise and collaborate with him in determining the extent of the loss in the collapse of the Tacoma Narrows bridge. The engineers selected are Hardy Cross, professor of civil engineering at Yale; Shortridge Hardesty, consulting engineer, New York; Holton D. Robinson, consulting engineer, New York, and Wilbur M. Wilson, research professor in structural engineering, University of Illinois.

The Narrows Bridge Loss Committee is made up of representatives of the insurance companies that insured the bridge.

The statement in these pages in the Jan. 23 issue that Charles Evan Fowler is associated with Mr. Paine in this work was in error.

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Canada, like U. S., has defense housing problem

Vital importance of proper housing facilities to insure efficient operation of Canada's industrial war effort was stressed by F. W. Nicolls, national housing director, before the 16th annual general sales convention of Building Products Limited which was held at Montreal, Feb. 24.

Referring to reports of the U. S. Government covering the housing situation during World War 1. Mr. Nicolls declared that it had been estimated that the production loss due to inadequate housing was as high as 30 percent. "With Canada spending a billion dollars a year on war industries, a similar loss due to inability to accommodate workers would result in a production loss of $300,000,000," said Mr. Nicolls.

Pointing out that approximately 145,000 men are now employed in Canadian war industries, Mr. Nicolls said, "there are not 5,000 housing units available for them. One of the first things the government proposes to do is encourage small home building under the National Housing Act. Since this act was first introduced, some 20,000 houses have been constructed. During the past year more than 2,000 homes costing $2,500 or less were built. Lending companies are cooperating with the government in encouraging this type of building."

D. P. Hatch, vice-president and general chairman of the convention, said, "There will be a serious bottleneck in Canada unless thousands of new houses are provided for war workers. In Montreal alone some 5,000 homes will be needed by next June. The provision of adequate housing ranks with the manufacture of armaments and other implements of war in its importance to Canada today." Following the war, Mr. Hatch declared, there will undoubtedly be a wave of immigration from Britain and Europe and much of this wartime housing will be useful for peacetime workers.

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Superhighways criticised by U. S. Road Spokesman

Transcontinental superhighways, proposed as a solution to the road needs of the defense program, were described before a meeting of the Michigan highway conference, last week, as "spectacular and unreasonable," by H. S. Fairbank, information chief of the U. S. Public Roads Administration.

Arguments for such highways have been in some instances based on the success of the German highway system. "The strategic purposes that such a system in Germany would be intended to serve," said Mr. Fairbank, "are still so dissimilar to any strategic objectives of the United States that it would be wholly unreasonable to assume that an imitation of the German superhighway system would equally serve our purposes." Improvement of existing highways up to good civilian standards in all sections of the country was recommended instead.

G. Donald Kennedy, Michigan state highway commissioner, in speaking before the conference, urged state and national support for the crosstown express road now being constructed in Detroit. "Sixty-five percent of the state's production of munitions is allocated to the Detroit-Dearborn area," Mr. Kennedy said, "and unless we succeed in our efforts to break the great metropolitan log jam, it will severely handicap the efficiency of the nation's fabricating arsenal."

At the annual highway banquet, twelve Michigan county road commissioners were presented with awards for outstanding management policies and procedures in a national contest sponsored by *Better Roads*. Approximately 3000 county highway departments from all sections of the country entered the contest.

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Water modernization program for Philadelphia

The City of Philadelphia will start construction on its $18,000,000 waterworks modernization program about April 15, according to Mayor Lamberton's announcement of Feb. 15.

A bond issue of approximately $6,000,000 will be floated the latter part of May, under the total $18,000,000 authorization. In order to begin construction April 15 necessary funds will be provided by City Controller Robert C. White from the city's surplus funds.

Army has not accepted AFL overtime pay proposal

The offer of the building trades department of the AFL to limit overtime pay to time and a half (*ENR*, Feb. 27, 1941, p. 29) has not yet been accepted by the Army. Delay is occasioned by an imbroglio between the Army and the labor division of the Defense Commission. The department made its decision at its Miami executive meeting in January, with three unions not included—the plasterers and ironworkers because double time for holidays is written into their constitutions, and the plumbers because they didn't approve of the idea.

The Army considers that it is precluded from taking advantage of the AFL's offer by the "Statement of Labor Policy" which was drawn up by the Defense Commission last fall and approved by the President. This statement specified that rate of pay on week ends and holidays conform with local practice—which in many cases calls for double time. Army lawyers feel that Presidential approval of this policy gives it the force of an executive order and that they cannot diverge from it, even with union consent, until the policy is changed by the commission.

Army has not asked the commission to change the policy, feeling that the next move is up to AFL.

No defense contractor should attempt to recruit labor outside his area or advertise for labor either locally or nationally without first trying to get men from the U. S. Employment Service, OPM director Wm. S. Knudsen said in a letter sent to all defense contractors. Labor scouting and nation-wide advertising, Knudsen said, "result in unnecessary migration of labor, high rates of labor turnover, disturbance of established labor standards in local areas." The letter said that the U. S. Employment Service maintains a nation-wide clearance system through which needed labor may be had after exhaustion of the local supply.

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Flood control urged in North Carolina

A body of representative citizens from western North Carolina meeting in a conference with TVA engineers in Knoxville, Tenn., Feb. 22, requested federal aid for flood control in that area.

In recent years considerable property damage has occurred in this section due to floods. Spokesmen for the western North Carolina group asserted that industries located in the flood zone had postponed expansion plans and that other industries would not establish new plants until the flood problems are overcome.

Among TVA officials meeting with the citizens delegation were: T. B. Parker, chief engineer; Neil Bass, chief conservation engineer; Sherman M. Woodward, chief water control planning engineer; R. A. Monroe, assistant chief water control planning engineer; J. S. Bowman, head planning engineer; A. S. Fry, head hydraulic research engineer; J. H. Kimball, of the flood control section; C. W. Okey, backwater protection expert; William J. Hayes, assistant to general manager, and William C. Fitts, Jr., general counsel.

It is understood that consideration will be given to the proposal for federal aid and recommendations will be forthcoming in the near future.

New plan for use of USHA projects in defense

Purchase of USHA housing projects nearing completion in designated defense areas, is being examined by FWA's John M. Carmody, as a means of quickly acquiring badly needed homes for defense workers.

It is proposed that FWA (under the Lanham Act) purchase from local housing authorities those projects which are almost completed and which can be used to advantage for defense workers. The proceeds of the sale would be turned over to USHA in payment for its loan, and the USHA then would make the funds available for immediate construction of another low-rent housing project in the same locality.

The plan is applicable only where local authorities request or approve such action. Arrangements are being pushed to effect such an exchange in the Boston area, for example, where the influx of defense workers has created a serious housing shortage.

Under this plan thousands of defense workers could be moved into suitable homes in a matter of days, whereas it would take months if they are obliged to wait for projects to be completed.

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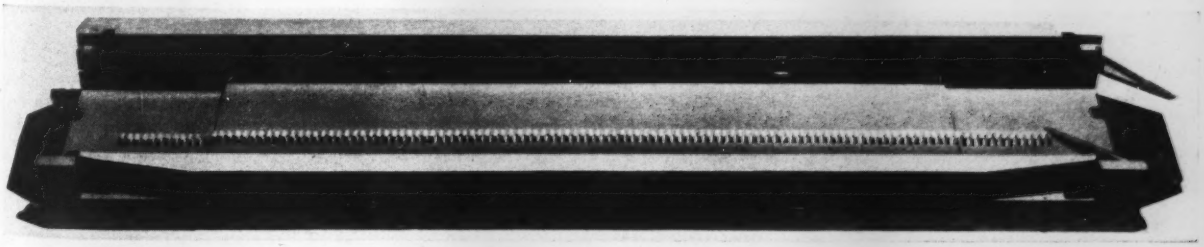
Mississippi River Bridge Survey Started

A survey to determine the location of the proposed new bridge across the Mississippi River at Memphis, Tenn., is now under way, according to E. H. Crump, chairman of the Arkansas-Tennessee Bridge Commission.



Navy builds unique three-section floating drydock

Under construction for the Navy at Galveston, Tex. is a new type of floating drydock which has a 30-percent greater lifting capacity than other drydocks of similar weight.

The new design, providing three sections, is a self-docking type of all welded construction. Without moving the docks from its moorings, it will be possible to drydock for over haul or clean either the center section or the two end sections, by bringing the latter together, or the two end sections and the center section. This feature has been developed to speed up construction and maintenance operation.

Among other features of the drydock is its buoyancy chamber and circular bottom, the combination of which provides economy and strength. The effect of the circular bottom is that when a vessel is on the dock and the water has been pumped out, more buoyancy is created and the pick-up of the load is concentrated in the center. The approximate weight is 4,800 tons with operating machinery. A lifting capacity of 18,000 tons will be possible.

The drydock will have an overall length of 614 ft.; width overall, 116 ft.; length between outriggers, 544 ft.; length of center section, 384 ft.; width between wings, 90 ft.; height of wings to crown line, 42 ft. 3 in.; height from wingtop to bottom of dock, 48 ft. 9 in.

The project is being built by the Todd Shipbuilding Corp., and Frederic R. Harris, Inc., consulting engineers, were the designers. Construction is expected to be completed within nine months, and will cost $2,254,342.

MEN AND JOBS

DANIEL R. NEFF, senior engineer, who for the past five years, has been in charge of river improvement for the Missouri river division of the U. S. Engineers, located at Kansas City, Mo., has been transferred to the U. S. Engineer Office at Philadelphia, Pa. Mr. Neff becomes chief of operations for that district.

FRANK E. CASH, engineer in charge of the Birmingham, Ala., district office of the U. S. Bureau of Mines for the past 15 years, has been transferred to the bureau offices at Duluth, Minn. He will be succeeded by E. A. ANUNDSEN, who has been transferred from the bureau's office at Phoenix, Ariz.

LEROY ARNOLD, of Kansas City, Kan., who for the past eight years has been county engineer of Wyandotte County, has resigned from that position to accept an appointment with the U. S. Engineers, and has been assigned to the quartermaster division at Fort Leavenworth, Kansas.

EDWIN P. KNAPP, county engineer of Wallace County, Kan., for the past five years, has resigned that position to become engineer for Cove county, with headquarters at Cove.

L. H. EARNEST, district planning engineer for the WPA in the Houston, Texas district, has been appointed district director of operations, succeeding DALLAS J. MATTHEWS, JR., who has been called to active military duty with the 36th Division, Camp Bowie, Brownwood, Tex. Mr. Earnest will be succeeded as district planning engineer by JACK C. EUBANKS. ANDREW A. RASMUSSEN will replace WILLIAM F. SMITH as area engineer in the district.

P. D. DAVIS, Durham, N. C., engineer, has been made chief engineer in charge of design of the new anti-aircraft firing base being constructed by the U. S. Army at Holly Ridge, N. C. Mr. Davis is associated with WILLIAM M. PIATT, of Durham, who is a consulting engineer on the project.

E. W. TEAGARDEN, formerly with the Colorado State Highway Department at Denver, is now assistant naval architect at the Philadelphia, Pa. Navy Yard, working in the hull structure group of the design section.

EARL CAPEL, former assistant district engineer of the Iowa Highway Commission, has been made acting district engineer at Sioux City, to replace E. W. DUNN, who is working on the army barracks at Rolla, Mo. G. S. HUXTABLE, former division maintenance engineer, has been made acting assistant division engineer, and C. A. ROGERS has been transferred from Adel.

V. G. GOULD, assistant bituminous engineer of the Iowa Highway Commission, and a reserve officer in the army engineering corps, has been called to active duty at Fort Belvoir, Va.

HAROLD OLIVER, who recently retired as lieutenant in the U. S. Coast and Geodetic Survey, is now a general engineering instructor at the University of Washington, Seattle, Wash. He was a civil engineering graduate of Iowa State College in 1927.

J. J. REUTER, assistant city engineer of Virginia, Minn., has resigned to accept a position with the E. W. Coons Co. of Hibbing.

VICTOR MCCORMACK, city engineer at Atlantic, Iowa, has resigned that position and is now actively engaged in national defense construction.

WARDNER G. SCOTT, Nebraska state engineer, has been appointed a member of the state's Tri-State water compact commission for Republican River problems. He succeeds A. C. Tilley, former state engineer.

F. A. RODY, for four years engineer for Jewell County, Kan., has been made county engineer for Pratt County.

R. M. LEGATE, civil engineer, has resigned his position as manager of the light department of the town of Campbellton, N. B., to accept a position with the Hydro-Electric Power Commission of Ontario, in Toronto, Canada.

WALTER J. MANNING, civil engineer, has been appointed district engineer at Quebec for the marine branch of the department of transport of the Dominion. Mr. Manning is a graduate of the Ecole Polytechnique of Montreal, in the class of 1927. Since 1937 he has been with the department of public works of the Dominion, first as resident engineer at Rimouski, Que., and lately in the Montreal office.

THOMAS C. GAY, of Towanda, Pa., has been appointed project engineer by the Pennsylvania Highway Department. L. SHIELD, JR., of West Lawn, Pa., has been made assistant district traffic engineer.

G. F. BRIGGS, formerly an engineer with the Nebraska State Highway Department, and who obtained a leave of absence for a year to advise the Argentine Republic on road building, will soon leave that country for Brazil to act in a similar capacity.

JEAN DOUCET, civil engineer, has joined the staff at Collet Freres, Ltd., general contractors, in Montreal, Canada. He was formerly associated with the Canadian National Railways and with the provincial department of public works. Mr. Doucet, is a graduate of the Cole Polytechnique of Montreal.

STANLEY S. LEARNED, of Bartlesville, Okla., has been promoted from the position of chief engineer of the Phillips Petroleum Co., to assistant general manager, in charge of the company's pipe line department. Mr. Learned is a graduate of the University of Kansas.

JOHN W. KIRSTEIN has accepted a position as erosion specialist for the National Gas Pipeline Co. of America, and is now located at Harper, Iowa. He is a graduate of Iowa State College, class of 1938.

S. Y. SYMNS, who spent six years in Liberia, West Africa, with the Firestone Plantation Co. on surveying, drainage and similar work, is now connected with Wilbur Watson & Associates on construction at the Ravenna, Ohio, ordnance plant. In his present position he is working under the direction of L. B. ROBERTS, who was formerly assistant chief engineer of the New York World's Fair development.

GEORGE L. BURKE, formerly deputy commissioner of public works of the state of Connecticut, has been appointed commissioner of public works, having succeeded ROBERT A. HURLEY, recently inaugurated Governor of Connecticut.

HOWARD P. MAXTON, formerly general cost engineer for the Tennessee Valley Authority, recently joined the navy department with the Bureau of Yards and Docks, to assist Commander J. J. Manning in the establishment of an organization for the administration of the cost-plus-fixed fee contracts.

CHARLES E. BOWERS of Brookings, S. D., has been appointed district airport engineer for the Civil Aeronautics Authority, with headquarters at St. Paul, Minn. He succeeds WILLIAM TODD, JR., who has been transferred to Washington as a CAA reviewing engineer.

COMDR. HENRY F. BRUNS, public works officer of the 14th Naval District and Pearl Harbor Navy Yard, has been advanced to the rank of captain. Commander Bruns has been on duty in Hawaii for three years.

Advance graduation date for engineers considered

Advance of the date of graduation of students in engineering schools from June 1942 to January of that year by eliminating the summer vacation for seniors this year is to be considered at a meeting of engineering educators in Washington March 8. The meeting is to be under the auspices of the Committee on Engineering Defense, U. S. Office of Education, of which Dean A. A. Potter of Purdue University is chairman. Subjects to be discussed are financing the added cost to the engineering schools and aid to students who will be deprived of the opportunity to work during the summer vacation.

The U. S. Office of Education has asked heads of engineering schools for their opinions on the advisability of eliminating summer vacations to make it possible to complete a four-year course in three years in the present emergency.

A protest against this proposal has been registered by the Engineering Students' Council of the University of Washington as being an unnecessary load on the students and teaching staff. The council calls attention to the fact that the government has not yet made any provision for assigning engineers called into service under the Selective Service Act to work for which they are trained. As a result, students have no assurance that the extra work involved in the speed-up will be any help in the defense program.

Some advocates of federal subsidies to engineering schools are preparing a substitute for the Green Bill (*ENR*, Feb. 20, 1941, p. 293). Where the Green Bill gives first call on the subsidy to land-grant colleges, the proposed substitute will put all colleges on a parity and leave it up to the state legislatures to decide what school in each state is to receive the money. It is said that the administration is more inclined to support this latter proposal.

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USHA starts New England's largest defense project

To meet the rapidly increasing demands for housing facilities to accommodate New England's industrial workers engaged on defense projects, USHA has started construction on a development that will provide 1,000 homes at Hartford, Conn. The housing situation at Hartford, which was not entirely satisfactory before the present defense emergency, has now become acute. In case of Pratt & Whitney, airplane engine builders, employment has increased from a normal of about 3,500 to nearly 15,000. The normal force of the Colt Patent Fire Arms Co. has doubled, and there have been similar increases in employment at other plants working on defense orders. Influx of workers is still going on and decent houses at reasonable cost are not obtainable. In many cases workers' families have doubled up in such living quarters as they could secure, and have taken to trailers and in some cases to tents. The overflow from Hartford has been of such proportions that surrounding towns are beginning to be concerned.

According to an official of the Pratt & Whitney-United Aircraft plant, 50 percent of the plant's personnel turnover has been due to lack of housing facilities.

The new USHA defense housing project will provide homes for approximately 3,300 people. Plans call for one and two-story frame twin houses and brick row houses. Construction contract was awarded to Cauldwell-Wingate Co. of New York City, at a price of $3,597,000. The construction schedule calls for first units to be ready for occupancy in 180 days from date of contract, the entire project to be completed in 300 days.

Out of the 19,569 homes for defense workers being built under USHA jurisdiction, 1,424 are now either occupied or ready for tenants. USHA has an even 50 defense projects, and of these 19 are being built by local housing authorities with USHA funds. There are 6,294 dwelling units in this part of the USHA program which is now more than 50 percent completed.

Funds have also been supplied by USHA for the construction of one Army and three Navy housing projects. These projects, with a total of 1,725 homes, are being built under direct Army and Navy supervision.

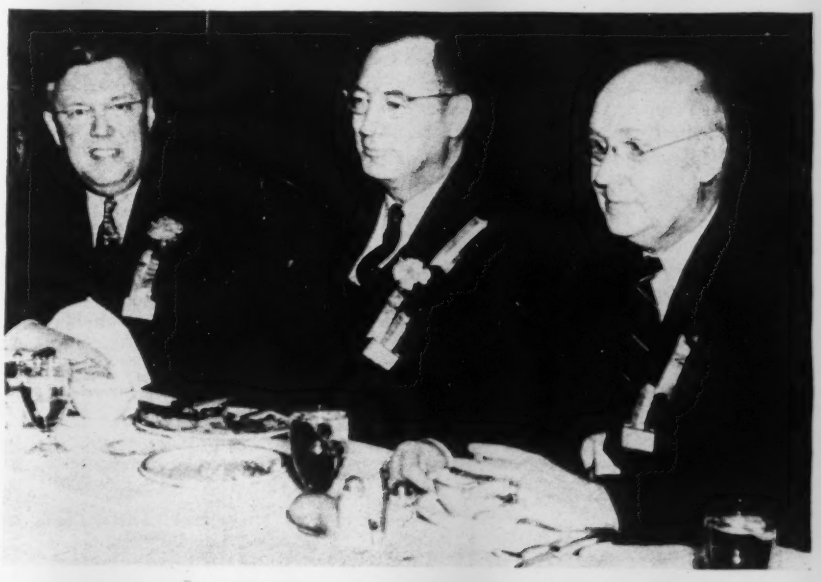
The Federal Works Administrator has assigned funds to USHA, under the Lanham Defense Housing Act, for the construction by local housing authorities of 27 projects. This group of projects includes 11,550 dwelling units. Total USHA defense activity will furnish homes for approximately 65,000 persons.

Of the 19 projects in the first group, six now have tenants and all but one are under construction. The three Navy projects are all under construction and one of them, at Mare Island, already has tenants. The housing development at Anchorage, Alaska, will get under way as quickly as weather permits construction.

• • •

Million dollar road program for Texas county

With a WPA allotment of $742,492.77, supplemented by a county appropriation of $328,681.74, Harris County, Tex., expected to inaugurate, March 1, a program of road improvement involving the stabilization of 82 mi. of surface, in addition to a considerable amount of grading, drainage structures, buildings, etc., which will total approximately 200 mi. of road improvement. The county is just completing a million dollar farm-to-market road program.



Eastern highway engineers elect new officers

Thomas C. Frame (right), chief engineer of the Pennsylvania department of highways, was elected president of the Association of Highway Officials of the North Atlantic States at its annual meeting in Boston. He succeeds H. E. Sargent, commissioner and chief engineer, Vermont department of highways (center). At the left is A. Lee Grover, secretary, New Jersey state highway department, re-elected secretary-treasurer.

Leaders in three fields of civil engineering die

After last week's issue of *ENR* had been sent to press came announcement of the death of three outstanding leaders in the field of civil engineering.

CHARLES A. STONE, chairman of the board of Stone & Webster, Inc., Boston, Mass., of which he was a co-founder, died at his home in New York City, Feb. 25, in his seventy-fourth year.

With Edwin S. Webster, a classmate at the Massachusetts Institute of Technology, Mr. Stone set up a consulting engineering business in 1889, with a capital investment of $4,000, which has expanded into a national organization whose services today includes engineering construction for practically every type of industry, the underwriting and distribution of securities and the supervision of electric, gas and transportation properties. In its 51 years of business, Stone & Webster has completed construction work costing more than $1,000,000,000.

Mr. Stone's influence, not alone in his own organization but on engineering as a profession and as a business, had earned for him a place among the greatest engineers of this country.

GEORGE F. DRISCOLL, founder and president of one of the largest building contracting firms in Brooklyn, N. Y., died Feb. 22 at the age of 69. Mr. Driscoll rose from an apprentice bricklayer to become president of one of the largest construction companies in the country. Two weeks before his death, the War Department had named Mr. Driscoll's firm to work jointly with the Walsh Construction Co. of New York in the $51,000,000 contract for building the new Army base at Trinidad.

J. E. PENNYBACKER, managing director for 22 years of The Asphalt Institute, with headquarters in New York City, died at Delray Beach, Fla., Feb. 25. Mr. Pennybacker was an authority on road construction, having served since 1906 as an economist and statistician on many government highway commissions and bureaus in the United States and Canada. He served as chief of management of the U. S. Bureau of Public Roads from 1914 to 1917, and during the World War was secretary of the U. S. Highways Council. Mr. Pennybacker was chairman of the road board of the American Automobile Association, and well known to many thousands of engineers through his many articles appearing in the technical press.

Mr. Pennybacker was a native of Franklin, W. Va., and studied at the University of West Virginia, later graduating from Georgetown University. He was 63 years old.

JOBS OF THE WEEK

SHIPYARD, New Orleans, La.
J. G. White Engineering Corp., New York, N. Y., has received a contract for constructing six ways on the Industrial Canal at plant of Louisiana Shipyards, Inc., New Orleans, La., at cost of $4,800,000.

STEEL PLANT, Sparrows Point, Md.
James Stewart & Co., New York, N. Y., has been awarded contract for expansion of plant facilities by Bethlehem Steel Co., Sparrows Point, Md. Total cost is from $3,000,000 to $4,000,000.

CEMENT PLANT, Northampton, Pa.
Turner Construction Co., New York, N. Y., has contract for the construction of a cement plant for the Universal Atlas Cement Co., New York City. Cost is estimated at $5,000,000. Steel for plant will be furnished by American Steel & Wire Company, New York, N. Y.

DRY DOCK and NAVAL SUPPLY TERMINAL, Bayonne, N. J.
George H. Flinn Corp., New York, N. Y., and Great Lakes Dredge & Dock Co., Chicago, Ill., will construct the graving dry dock at Bayonne, N. J., at an estimated cost of $10,000,000. Same contractors will build a Naval supply station to cost $5,000,000. Bureau of Yards and Docks, Navy Department, Washington, awarded the contracts.

PLANT, Beaver, Pa.
War Department, Washington, awarded contract for a plant to manufacture airplane propellers at Beaver, Pa., to Curtiss Propeller Division, Curtiss Wright Corp. Cost, including machinery and equipment, will be $5,221,100.

CARTRIDGE CASE PLANT, Indianapolis, Ind.
War Department awarded contract to Bridgeport Brass Co., Bridgeport, Conn. Plant will be built at or near Indianapolis, to manufacture cartridge cases and will cost $11,500,000, including machinery and equipment.

ALUMINUM ROLLING MILL, Sheffield, Ala.
F. H. McGraw Co., New York, N. Y., has been awarded contract to construct an aluminum rolling mill by Reynolds Metal Co., Richmond, Va. Cost will be about $10,000,000.

PLANT, Kenosha, Wis.
American Brass Co., Waterbury, Conn., has been awarded contract to construct plant for the manufacture of ammunition brass and ammunition cups. Total cost will be $4,760,000.

AIRPLANE CRANKCASE FACTORY, Harrison, N. J.
Bethlehem Steel Co., New York, N. Y., has been awarded the steel contract for constructing 1-story, 449x483-ft. brick, steel, airplane crankcase factory for Otis Elevator Co., New York, N. Y. Bulkheads awarded to Linde-Griffith Construction Co., Newark, N. J., and concrete piles to Raymond Concrete Pile Co., New York, N. Y. Total estimated cost including equipment $6,954,000.

TIN SMELTER, Texas City, Tex.
R.F.C. awarded contract for construction of a government owned tin smelter to Tin Processing Corporation, subsidiary N. V. Billiton Maatschappij, c/o J. Van Der Broek, New York, N. Y. Smelter will cost $3,000,000.

AIRCRAFT FACTORY, Cleveland, Ohio
Burger Iron Company, Akron, Ohio, has been awarded contract for 3,500 tons structural steel for aircraft factory for Thompson Aircraft Co. Total estimated cost of project $3,000,000.

CANTONMENT and TENT CAMP, Abilene, Tex.
Taylor-Byrne-Briggs, Abilene, Tex., has been awarded contract for additional housing units at cantonment and tent camp by War Department, Washington. Estimated cost on additional work $1,554,800. Total cost will be $7,051,320. Contractors are R. W. Briggs, San Antonio, J. T. Taylor, Fort Worth, Thomas S. Byrne, Fort Worth.

COOPER RIVER DREDGING, South Carolina
McWilliams Dredging Co., Chicago, Ill., will dredge the Cooper River Tail Canal for Santee Cooper Project, Berkeley County, S. C. The South Carolina Public Authority awarded contract at $2,327,450. T. B. Parce, is chairman of Authority.

BRIDGES, Bradenton, Fla.
Longboat Bridge Co., c/o E. M. Elliott, Sarasota, Fla., will construct by force account two bridges, one over Sarasota Pass and one over Longboat Pass. Cost is estimated at $1,500,000.

NOTE—Additional bidding and contract news on over 800 projects large and small appear in the Construction News section beginning on page 19.

OBITUARY

HOWARD C. GRISWOLD, 73, died Jan. 29, at Louisville, Ky. He was assistant inspecting engineer of Illinois Steel Co.

PHILIP R. VAN FRANK, 75, engineer, died Jan. 27, at Little Rock, Ark. Mr. Van Frank retired in 1935 from active practice as a consulting engineer.

CARL FRANZ WEIFFENBACH, civil engineer and formerly city engineer of the city of Columbus, Ohio, died Jan. 26 at Columbus.

WILLIAM RUFUS STEPHENS, construction engineer for the Magnolia Petroleum Co., died Jan. 29 at Dallas, Tex.

BERNARD BRAULT, 54, civil engineer, died in Montreal, Canada, Jan. 24. He was vice-president of the Dufresne Construction Co. until three years ago, when he withdrew and organized his own firm.

JOHN KERSHAW ASHWORTH, civil engineer, died in Montreal, Canada, Dec. 16. In 1933, he was appointed manager of R. & M. Bearings and until last April, he was vice-president of that company.

SIDNEY R. HARTWELL, 65, associate engineer and purchasing agent for the U. S. Engineer Department District office at Milwaukee, died Feb. 4. He had been connected with the Corps of Engineers for 40 years.

FRANK N. NORTH, 57, civil engineer, died Feb. 17 at Indianapolis, Ind. He was associated with the C.&E.I. Railroad for 13 years.

WILLIAM BALDERSTONE, 68, retired civil engineer, died Feb. 7 at Vancouver, British Columbia.

DAVID L. GRAY, 71, civil engineer, died Feb. 11 at Scarsdale, N. Y. He was a consulting vice-president of the Erie Railroad.

CHARLES JENNINGS STRANG, retired civil engineer, died Feb. 12 at Jersey City, N. J.

TRUMAN M. POST, retired civil engineer, 65, died recently at St. Louis, Mo.

MAJ. S. F. WILSON, 55, district supervisor for the Illinois division of highways died Feb. 16 at Signal Hill, Ill.

JOHN MILTON ROBERTS, 67, civil engineer and paving contractor for 30 years, died at Lincoln, Neb. recently. Mr. Roberts was a native of Lincoln, Neb.

W. H. BIRDSONG, 58, of Greenville, Miss. and secretary of the Board of the Mississippi Levee Commission, died recently.

FRED L. SMITH, 78, president of Smith, Hinchman & Grylls, architects of Detroit, Mich., died Feb. 25. His firm designed many of Detroit's skyscrapers.

WILLIAM C. SHEPHERD, 78, well known building contractor and building consultant, died recently at his home in Wilkes Barre, Pa.

L. H. HANKINS, 49, well known road building contractor of Natchitoches, La., died recently. Mr. Hankins was a former member of the Louisiana State Highway Commission.

ROBERT E. BEITH, 52, engineer of Westmount, Que. and supervisor of engineering projects at Camp Sussex, N. B., was accidentally killed recently at a grade crossing. He had been on the staff of the dominion department of public works for the past 32 years.

G. HILLEBRAND, 84, retired surveyor of Chicago, died Jan. 27. Mr. Hillebrand, who had been retired for 22 years, in his early career was engaged in railway construction work in Transvaal, South Africa.

CONTRACTS AND CAPITAL

ENGINEERING CONSTRUCTION awards for the week, $103,962,000, top the hundred-million-dollar-mark for the third straight week. This record has only been matched twice, once in May 1929, and the other time in October of last year. The week's total is 164 percent above the corresponding 1940 week, but is 13 percent below a week ago.

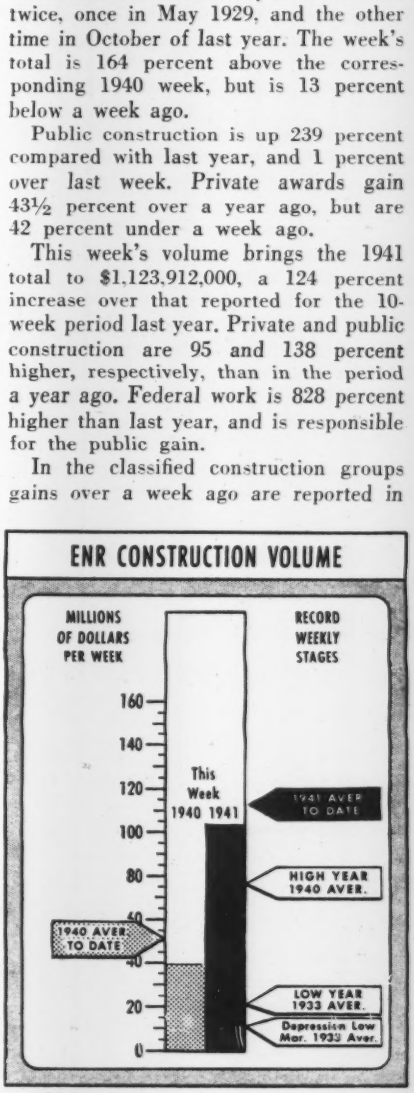
Public construction is up 239 percent compared with last year, and 1 percent over last week. Private awards gain 43½ percent over a year ago, but are 42 percent under a week ago.

This week's volume brings the 1941 total to $1,123,912,000, a 124 percent increase over that reported for the 10-week period last year. Private and public construction are 95 and 138 percent higher, respectively, than in the period a year ago. Federal work is 828 percent higher than last year, and is responsible for the public gain.

In the classified construction groups gains over a week ago are reported in bridges and public buildings. Comparisons with the week a year ago reveal increases in sewerage, bridges, industrial and public buildings, earthwork and drainage, and unclassified construction.

New capital for construction purposes for the week totals $8,871,000, an increase of 6 percent over the 1940 week. The current new financing is made up of $5,452,000 in state and municipal bonds, and $3,419,000 in corporate security issues.

New construction capital for the year to date, $687,982,000, exceeds the volume for the 10-week period last year by 272 percent.



CONTRACTS

(Thousands of dollars)

	Week Ending Mar. 7 1940	Feb. 27 1941	Mar. 6 1941
Federal	$2,392	$51,025	$59,994
State & Municipal	21,985	30,981	22,545
Total public	$24,377	$82,006	$82,539
Total private	14,931	37,195	21,423
TOTALS	$39,308	$119,201	$103,962
Cumulative 1941 (10 weeks)			$1,123,912
1940 (10 weeks)			$502,213

Note: Minimum size projects included are: Waterworks and waterways projects, $15,000; other public works, $25,000; industrial buildings, $40,000; other buildings, $150,000.

NEW PRODUCTIVE CAPITAL

	Cumulative 1940 10 weeks	1941 10 weeks
NON-FEDERAL	$184,845	$178,982
Corp. Securities	33,634	56,169
State & Mun.	89,848	83,422
U.S.H.A. loans	60,786	13,521
R.F.C. loans	577	25,870
FEDERAL		$509,000
TOTAL CAPITAL	$184,845	$687,982

FHA MORTGAGES

	Week Ending Mar. 2 1940	Feb. 22 1941	Mar. 1 1941
Selected for appraisal	$25,483	$28,046	$26,182*
Cumulative 1941 (9 weeks)			$194,719*
1940 (9 weeks)			$159,869

* Subject to revision.

ENR INDEX NUMBERS

Index Base=100		1913	1926
Construction Cost	Feb. '41	250.50	120.42
Building Cost	Feb. '41	208.42	112.67
Volume	Jan. '41	402	176

CONTRACT UNIT PRICES

What contractors are bidding on different kinds of construction work

INDUSTRIAL WATER MAINS WASHINGTON

OWNER: City of Bellingham, Wash.; H. A. Binzer, comptroller. J. W. Cunningham & Assoc., Portland, Ore., engineers.

PROJECT: Construction of 14,950-ft. industrial watermain, 6-ft. trench from screen house in Whatcom Falls Park to Bellingham waterfront.

CONDITIONS: Owner to furnish all pipe and fittings. Labor only involved in placing. Rail, highway and water transportation facilities available. Work to be completed in 120 days. Wage rates stipulated are: skilled, $1.85 per hr.; semi-skilled $1.25; and common, 90c.

BIDS: Five bids were received December 27, 1940, ranging from the contract low of $29,240 to $80,525.

LIST OF BIDDERS:

1. Axel Lind, Bellingham, Wash. (contract) $29,240
2. C. V. Wilder, Bellingham, Wash. 33,885
3. Valley Constr. Co., Seattle, Wash. 58,100
4. Croy-Lich, Bellingham, Wash. 65,600
5. Queen City Constr. Co. and Steel Tank Co., Seattle, Wash. 80,525

Item	Quan.	Unit Prices (1)	(2)	(3)
1. Clear and grub	L.S.	$500.00	$1,000.00	$3,500.00
2. Cut and replace pavement	460 s. y.	4.00	3.50	3.50
3. Trench excav. and backfill, rock	1,300 c. y.	3.50	2.00	5.00
4. Trench excav. and backfill, common	24,000 c. y.	.70	.90	1.40
5. Sub-trench exc. and bkfill., rock	50 c. y.	5.00	6.00	4.00
6. Sub-trench exc. and bkfill, common	150 c. y.	2.50	2.50	1.60
7. Creek crossing excavation	600 c. y.	2.50	2.00	5.00
8. Sand and gravel backfill	100 c. y.	4.00	2.00	4.00
9. Concrete backfill	50 c. y.	10.00	11.00	21.00
10. Riprap	50 s. y.	2.00	3.00	4.00
11. Tunnel at Robinsons	L.S.	1,600.00	2,000.00	2,000.00
12. Tunnel timbering	5 M bm.	65.00	90.00	100.00
13. Crossing 3 railroad lines	L.S.	350.00	1,600.00	4,800.00
14. Rebuilding culvert	L.S.	150.00	250.00	500.00

EXCAVATION, CONCRETE INVERT CONTINENTAL DIVIDE TUNNEL

OWNER: Bureau of Reclamation, Denver, Colo.; S. O. Harper, chief engineer.

PROJECT: Excavation of Continental Divide tunnel from Station 618+39 to Station 548+39, and the placing of the concrete invert of the tunnel from Station 698+39 to Station 552+00, Colorado-Big Thompson Project, Colo. (Spec. No. 950). Contractor is required to construct tile drains under invert before placing concrete. A 14,640-ft. long track is to be constructed on concrete invert. Gunite coating to be placed to prevent spalling or disintegration of excavated surfaces in the tunnel. A concrete core wall for dam at outlet end of tunnel is to be built under this contract.

CONDITIONS: Government to furnish cement, reinforcement bars, metal water stops, drain tile, tar paper, and all pipe and fittings for permanent installation, timber ties and decking. Contractor to furnish sand, gravel, form materials, wire, temporary supports, water, tunnel supports both timber and metal, tunnel-liner plates, spalls, material for tamped fills, ventilating pipes and rails bolts for track on concrete invert of tunnel.

Work to be completed in 450 calendar days. Access from existing roads to be provided by contractor. Wage rates specified are: skilled labor, 70c. to $1.50 per hr.; common labor 62½c.

BIDS: Three bids were opened February 3, 1941, ranging from the contract low of $784,711 to $869,415.

LIST OF BIDDERS:

1. S. S. Magoffin Co., Inc., Englewood, Colo. (contract) $784,711
2. Ed. H. Honnen Constr. Co., Colorado Springs, Colo. 819,462
3. J. N. Gordon & Hinman Bros. Constr. Co., Denver, Colo. 869,415

Item	Quan.	Unit Prices (1)	(2)	(3)
1. Excav., all classes, tunnel	35,000 c. y.	$13.33	$14.20	$13.50
2. Excav., all classes, sumps in tunnel	30 c. y.	10.00	20.00	20.00
3. Excav., all classes, enlarg. of tunnel	1,000 c. y.	15.00	18.00	15.00
4. Excav., stripping sand and grav. deposits	3,000 c. y.	.30	.20	.20
5. Compact fills, dam at outlet end of tunnel	4,000 c. y.	.60	.50	1.00
6. Tamped fills, corners tunnel invert	8,000 l. f.	1.00	.20	.50
7. Permanent steel tunnel supports	1,050,000 lb.	.065	.08	.08
8. Permanent timbering, tunnel	375 M bm.	90.00	80.00	100.00
9. Steel tunnel-liner plates	50,000 lb.	.07	.065	.10
10. Washed gravel or spalls outside steel tunnel-liner plates	100 c. y.	6.00	4.00	2.50
11. Remove permanent steel tun. supports	10,000 lb.	.20	.02	.05
12. Remove perm. timbering, tunnel	3 M bm.	150.00	40.00	200.00
13. Reinstall perm. steel tun. supports	5,000 lb.	.04	.04	.07
14. Re-erect. perm. timber in tunnel	2 M bm.	50.00	70.00	250.00
15. Ventilating pipe	25,400 l. f.	1.60	1.70	1.40
16. Gunite in gunite coating	100 c. y.	30.00	27.00	25.00
17. 6-in. tile drains under conc. invert	4,600 l. f.	1.00	.50	2.00
18. Inst. weep pipes from drainage sumps	350 lb.	.20	.10	.20
19. Drill feeler or pilot holes ahead of tunnel excav.	10,000 l. f.	.60	.30	2.00
20. Drill grout holes following tunnel excav.	3,000 l. f.	.75	1.00	1.00
21. Drill grout holes under conc. core wall	250 l. f.	1.00	1.00	3.00
22. Place grout pipe and fittings	1,600 lb.	.20	.20	.50
23. Grouting ahead of tunnel excav.	4,700 c. f.	2.00	1.50	1.50
24. Grouting following-tunnel excav.	1,600 c. f.	2.00	2.00	2.00
25. Grouting behind steel tunnel-liner plates	1,000 c. f.	1.00	2.00	2.00
26. Grouting under conc. core wall	1,350 c. f.	1.00	2.00	1.50
27. Concrete in tunnel invert	6,550 c. y.	15.00	12.70	18.00
28. Concrete in core-wall	350 c. y.	16.50	14.00	20.00
29. Place reinforcing bars	25,000 lb.	.03	.03	.02
30. Construct track on conc. invert	14,640 l. f.	.40	1.30	1.50

ROCK EXCAVATION, SEWER NEW YORK

OWNER: President Bronx Boro, New York, N. Y.

PROJECT: Approximately 500 cubic yards of rock excavation for sewer along Hering Avenue, between Morris Park and Rhinelander Avenues. All work is in open trenches.

CONDITIONS: Contractor to furnish all labor, materials, equipment and other incidental items and complete work in 40 consecutive working days. Wage rates specified are: skilled, $1.15 to $2.25 per hr.; semi-skilled, $1.00 to $1.62½; and common, 87½c. to $1.50.

BIDS: Three bids were opened February 11, 1941, ranging from the contract low of $3,625 to $6,500.

LIST OF BIDDERS:

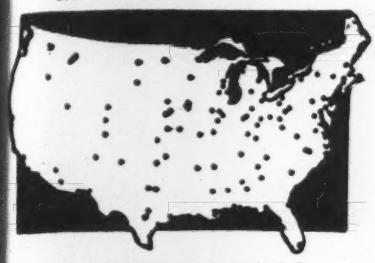
1. Turiano Foundation Corp., New York, N. Y. (contract) $3,625
2. Thomas A. Naclerio, New York, N. Y. 6,000
3. F.P.S. Contracting Co., Inc., New York, N. Y. 6,500

Item	Quan.	Unit Prices (1)	(2)	(3)
1. Rock excavation	500 c. y.	$7.25	$12.00	$13.00

CONSTRUCTION REPORTS

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York
ELSIE EAVES, Manager *SCOTT McLEOD, Statistician*
(Daily service also available—Write for details)

Location of ENR Correspondents



Symbols and Abbreviations Include:

† Federal Government
★ Project of $500,000 or over
ENR Engineering News-Record
CD Engineering News-Record Construction Daily

Projects—By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger; water supply, earthwork, waterworks, $15,000; other public works, $25,000; industrial buildings, $40,000; other buildings, $150,000.

Classes of Construction

(Named in order of Listing)

Water Supply	Unclassified
Sewers, Waste Disposal	Latin America
Bridges, Grade Cross'gs	Public Buildings
Streets & Roads	Commercial Buildings
Earthwork, Waterways	Industrial Buildings

Stages Reported

PROPOSED: (except Streets & Roads):
BIDS ASKED (new announcements only. For full calendar, see also preceding issues of ENR);
LOW BIDDERS: All low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.
CONTRACTS AWARDED: Except awards to low bidders previously reported in low bidder stage.

Dates shown are of issue in which last previous report was published.

WATER SUPPLY

PROPOSED WORW

Ill., Belleville—East St. Louis & Interurban Water Co., 513 Missouri Ave., East St. Louis, expansion facilities, incl. 2 additional pump. stations, laying new 20 in. main from East St. Louis to Belleville. $100,000.

Ia., Silver City—Plans bond election, water plant. $17,000. CD 2/19—ENR 2/27.

Mass., Fairhaven—F. E. Brown, town chn., Town Hall, WW sys. exten., incl. pipe lines, storage, etc. Over $15,000. F. A. Barbour, Tremont Bldg., 73 Tremont St., Boston, engr. CD 10/2—ENR 10/10.

Mass., Leominster—W. G. Classon, supt. Water Dpt., WW sys. exten. and replacements. Over $15,000.

N. J., Atlantic City—Reconstructing well basin at pump. station. $91,782. WPA. G. R. Swinton, 930 Atlantic Ave., Atlantic City, WPA and owner's engr.

N. J., Bridgeton—Exten. water sys. in northeast section of town. $75,658. WPA. G. R. Swinton, 930 Atlantic Ave., Atlantic City, WPA and owner's engr.

†N. J., Fort Dix—Con. Q.M., rejected bids Jan. 21, filtration plant. CD 1/23—ENR 1/30, under Sewers, LB.

N. Y., Dansville—Expanding water supply. Over $15,000. CD 11/26—ENR 11/28.

N. C., Valdese—J. Dalls Brinkley, mayor. Voted $25,000 bonds, water and sewer facilities imprvs. $50,189. CD 1/24—ENR 1/30.

O., Somerset — Water supply impounding reservoir and filtration plant. $110,000. CD 5/23—ENR 5/30.

Pa., Selinsgrove—General State Auth., 2 and Locust Sts., Harrisburg (State Dpt. P. Welfare, State Colony for Epileptics, Selinsgrove) reservoir for water supply sys., modern street lighting sys. for 1,400 acre grounds, automatic telephone switchboard. Est. $70,000.

Tenn., Jackson—A. B. Faust, mayor, watermains in new section of city. $15,000.

Tenn., Redboiling Springs—F. Gregory and J. B. Layfayette, Redboiling Springs, water sys. $15,000.

Tenn., Tullahoma—D. R. Campbell, mayor, extend., imprv. water sys. $25,000.

Utah, Salt Lake City—Denver & Rio Grande Western R.R. Co., A. O. Ridgway, ch. engr., Equitable Bldg., Denver, Colo., water conditioning plant. $300,000.

Wash., Longview—D. Carpenter, city clk., water filter plant. $95,000. Will retain new engineer and soon take new bids. CD 2/13—ENR 2/20.

Wis., Marshfield—Water & Light Comn., W. E. Deming, pres., water plant, and power imprvs., installing 4,000 kw. turbine. Over $25,000. Helmick, Edeskuty & Lutz, 412 Essex Bldg., Minneapolis, Minn., engrs.

Wis., New Lisbon—Chicago, Milwaukee, St. Paul & Pacific R. R. Co., W. H. Penfield, ch. engr., Union Station, Chicago, Ill., water tank. $15,000.

Wyo., Big Piney—Constructing WW sys. $34,000 bonds voted.

★**Ont., Ottawa**—Dominion Govt., Ottawa, water storage dams and reservoirs, during 1941 in provinces of Saskatchewan Alberta and Manitoba. $2,500,000 voted. Prairie Farm Rehabilitation Bd., McCullum Hill Bldg., Regina, Sask., engrs.

BIDS ASKED

Bids Asked March 13

Mass., Boston — Commonwealth of Massachusetts, Metropolitan Dist. Comn., Water Div., W. E. Whittaker, secy., 20 Somerset St., 4,800 lin. ft. steel watermain, Contr. 131, Arlington. Over $100,000.

Bids Asked after March 15

Neb., Falls City—Water softening sys. Over $20,000. E. H. Dunmire, 1802 13 St., Lincoln, engr. CD 10/30—ENR 11/7.

Bids Asked

Wis., LaCrosse—F. L. Kramer, city clk., iron removal plant. $16,000. J. H. Barth, city engr. CD 5/16—ENR 5/23.

LOW BIDDERS

†N. H., Manchester—U. S. Eng., Park Square Bldg., Boston, Mass., Feb. 21, water-sewerage sys., pipe lines, disposal, etc. at Air Corps Cantonment, from Central Constr. Co., 6 Beacon Ave., Lawrence, Mass., **$135,351.** CD 2/14.

N. J., Atlantic Highlands—Boro, Feb. 20, imprv. water sys., water treatment facilities and electrification pump. equip., from W. D. Bossbury Co., 129 Walnut St., Haddonfield. **$32,679.** CD 2/10—ENR 2/13.

Wash., Bremerton — Marine Drive Water Dist., Feb. 26, c.i. pipe, appurtenances in Rocky Point Dist., from L. Coluccio, 2226 3 Ave., Seattle. **$46,691.** Berry & Casad, Elks Temple, engrs.

W. Va., Beckley—Beckley Water Co., Beckley, Feb. 14, new water supply, Gende Creek Dam, 860 ft. long, 35 ft. high, from C. C. Dodd Constr. Co., Spencer. **$105,870.** Est. $113,200. CD 2/6.

CONTRACTS AWARDED

Minn., Frost—E. O. Voldahl, town clk., water supply sys., **WPA.** Over **$30,000.**

Mo., Carthage — 35,000 ft. watermains, 28 fire hydrants, **WPA. $91,000.**

Mo., Lutesville—Dr. W. W. Cornell, mayor, WW sys., **WPA. $43,379.**

Mo., Maryland Heights (St. Louis Co.)—Maryland Heights Water Dist. 2 of St. Louis Co., c/o G. Boden, Lansing Ave., south of Carlson; et al comrs., water distr. sys. within district centering around Fee Fee and Dorsett Rds., south of Creve Coeur Lake car line, **WPA. $100,000.** $25,000 bonds voted. Robert Francis Denny Co., 8004 Bonhomme St., Clayton, St. Louis, engrs. CD 2/14—ENR 2/12.

Mont., Sidney—Richland Co., W. A. Leo, clk., Sidney, water and sewer lines, **WPA. $40,000.**

N. J., Newark—Water Dpt., City Hall Annex, sheeting, c.i. watermains, **WPA. $34,100.** W. Banks, City Hall Annex, owner's and WPA engr.

N. Y., Schenectady—Laying 4, 6 and 8 in. c.i. watermains, own forces. Over **$25,000.** L. C. Purdy, city engr.

N. Y., Seneca Falls—Filtration plant, **WPA.** Over **$100,000.** Buck, Siefert & Jost, 112 E. 19 St., New York, engrs. CD 1/9—ENR 1/16.

†Pa., Middletown—Con. Q.M., water storage tank, at Middletown Air Depot, to Chicago Bridge & Iron Co., 37 W. VanBuren St., Chicago, Ill. **$17,450.**

Tex., Cuero—Brayton Flying Service, Inc., c/o C. Brayton, pres., Lambert St. Louis Municipal Airport, St. Louis, Mo. and Love Field and Hicks Field, Dallas, water and sanitary sewer lines, grading, leveling field etc., to D. F. Steele, 4413 Hyer St., Dallas. **$52,000.** Awarded 2/10. E. F. Miles, Cuero, engr.

Tex., Palestine—R. H. McLeod, mayor, WW sys. imprvs., new lines, replacement old mains, storage, **WPA. $31,260.** S. R. Buchanan, Palestine, engr.

Tex., Princeton—Imprv. water sys., new water lines, **WPA. $32,400.**

Man., McDonald—Dpt. National Defense for Air, Ottawa, Ont., water and sewer pump houses Bombing and Gunnery School 5, to Assiniboia Eng. Co. Ltd., 204 Lombard Bldg., Winnipeg, **$20,000.**

Ont., Kingston — Canadian Industries, Ltd., 135 Beaver Hall Hill, Montreal, Que., constructing, installing water intake pipe at Carruthers Point on Lake Ontario, to Canadian Dredge & Dock Co., Ltd., Harbour Bldg., Toronto. **$30,000.** CD 2/7—ENR 2/13.

Ont., Welland—Atlas Steels Ltd., Main St. E., erecting pump house and intake pipe, to Redfern Constr. Co. Ltd 36 Toronto St., Toronto, **$40,000.** James, Proctor & Redfern, 36 Toronto St., Toronto, engrs.

Que., Montreal—DPT. Natonal Defense, Ottawa, Ont., water and sewer services at No. 12 Equipment Depot, to Duranceau & Duranceau Ltd., 5847 Hamilton St., **$45,000.**

Que., Montreal South—Municipality, c/o D. Viger, City Hall, Longueuil WW sys., day labor. **$25,000.** H. Leclerc, City Hall, Longueuil, engr.

SEWERS, WASTE DISPOSAL

PROPOSED WORK

Calif., Boulder Creek—Boulder Creek Dist., plans bond election, sewage disposal plant. Over $25,000.

Fla., Dunedin—Sewage disposal plant. Over $25,000. L. Butler, c/o owner, engr.

Fla., Winter Haven — Renovating sewers. $130,000.

Ill., Henry—Election Mar. 18, to vote on construction sewerage sys. Over $25,000.

Ind., East Chicago—Bd. Sanitary Comrs., City Hall, bids soon 2 pressure main connecting sewers, under Indiana Harbor Canal (Canal St. Waterway crossing and Alder St., force main waterway), pumping sta. and outlet chamber. $74,500. R. B. Moore & Co., 930 Indiana Pythian Bldg., Indianapolis, engr. CD 9/20—ENR 9/26.

Mass., Worcester—Supt. Sewers, 20 E. Worcester St., preliminary plans exten. sewerage sys., Dists. 2, 4 and 6. Over $25,000.

Mich., River Rouge—Installing combined sewers, etc. $260,625.

Minn., Detroit Lakes—Voted $50,000 bonds, new building, additional facilities at municipal sewage disposal plant. $60,000. CD 1/22—ENR 1/30.

Mo., Springfield—H. B. Carr, mayor, enlarging sewers O'Reilly General Hospital area. $150,000. Seeking WPA aid. L. A. Weeks, Springfield, engr.

N. J., Cedar Grove—Essex Co., Hall of Records Bldg., Newark, sanitary sewers at Essex Co. Hospital, $40,000. W. Stickel, Hall of Records Bldg., Newark, engr.

N. J., Montclair—Sheeting, backfilling, rein.-con. storm sewers in various streets. $53,500. WPA. J. B. Hayden, Town Hall, town and WPA engr.

N. J., Union—64 in. concrete sewer tunnel, $255,000. E. T. Killam, 142 Maiden Lane, New York, N. Y., engr.

O., Cleveland—C. B. Patterson, city purch. agt., 2nd sect. low land area on west side of Cuyahoga River, $218,000; sewer on east side of Cuyahoga River, $33,000. E. C. Richardson, 517 City Hall, engr.

Okla., Tulsa—Surveys sanitary sewers to serve munitions factory plant dist. $75,000. W. Wooten, City Hall, engr.

S. D., Huron—M. F. Wait, city aud., sewage plant and sewers. $35,000 or more. J. B. Estabrook, Sexton Bldg., Minneapolis, Minn., engr.

Tenn., Jackson—A. B. Faust, mayor, new sewer lines in new area of city. $35,000.

SEWERS, etc. (Proposed Work, Cont'd.)

Tenn., Spring City—Sewerage sys. $75,000.

Tex., Houston—A. C. Pickett, mayor, new sewage treatment plant and enlarging existing plant. $250,000. J. M. Nagle, dir. P. Wks.

Tex., Velasco—E. F. Roeller, mayor, voted bonds, sanitary sewerage sys. and disposal plant. $30,000. CD 12/6—ENR 12/12.

†Utah., Wendover — U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif., bids soon, sewerage and water supply sys. Over $25,000.

Wis., Muscoda—L. Godfrey, city clk., sewage treatment plant. Over $25,000.

BIDS ASKED

Bids Asked March 21

N. Y., Jamaica—Dpt. P. Wks., Municipal Bldg., New York, Contr. 10, buildings and equip., Jamaica Sewage Treatment Works.

Bids Asked about May 15

Wis., Neenah — Garbage incinerator plant. $30,000. A. G. Prunuske, city engr. CD 1/29—ENR 2/6.

LOW BIDDERS

Ariz., Tucson—City, Feb. 20, sewer, water and gas sys. and appurtenant facilities at municipal airport, from C. J. Dorfman, 124 N. LaBrea Ave., Los Angeles, Calif. **$170,327.** CAA. CD 2/13.

Calif., Los Angeles—City, Feb. 19, sewers, impry. streets, Riverside Dr. and Agnes Ave. Sewer Dist., from Radich & Brown, 3000 Empire Ave., Burbank. **$56,433.** CD 1/14—ENR 1/16.

†Ill., Scott Field (Belleville)—U. S. Eng., 816 U. S. Courthouse and Customhouse, 12 and Market Sts., St. Louis, Mo., Feb. 24, sewage treatment plant with auxiliary piping, appurtenances and accessories, from Buesching Bros. Constr. Co., 219 E. Berry St., Fort Wayne, Ind. **$141,795.** CD 2/14.

Md., Baltimore — Bd. Awards, City Hall, Feb. 26, installing sanitary sewers, from J. Matricciani, 229 S. Exeter St., **$65,576.** CD 2/25.

Tex., Dallas—J. W. Aston, city mgr., Feb. 19, rein.-con. storm sewer in center and Marsalis Park from Adams to Jefferson, from M. & M. Constr. Co., 1100 Commerce St. **$32,696.** Est. $56,672. CD 2/10.

CONTRACTS AWARDED

Ia., Sumner — Sewage disposal plant, to Welden Bros., Iowa Falls. **$33,280.** Est. $33,000. Bids 2/20. CD 2/4—ENR 2/6.

Minn., St. Cloud—Storm drains, **WPA. $203,960.** A. J. Haberkorn, city clk.

Mo., Valley Park—W. J. Hodnett, city clk., City Hall, Marshall Ave., near Meramec Station Rd., exten., impry. sewerage sys. incl. storm and sanitary sewers, sewage disposal plant, **WPA. $198,630.** $45,000 bonds voted. Caldwell Eng. Co., Jacksonville, Ill., engrs. CD 2/3—ENR 2/6.

N. J., Montclair—Excavating, sheeting, new concrete inlet basins, **WPA. $59,500.** CD 2/10—ENR 2/13.

N. J., Newark—C.i. sewer mains, **WPA. $52,500.** J. Costello, city and WPA engr.

N. J., Vineland—Landis Twp., rein.-con. arch sewer in Oxford St. **WPA. $50,932.** CD 1/31—ENR 2/6, under Landis, N. J.

Ore., Salem—Sewage disposal plant, interceptor sewer, **WPA. $458,765.** J. W. Cunningham, Spalding Bldg., Portland, engr. CD 5/15—ENR 5/23.

Pa., Hazleton—Dpt. P. Wks., City Hall, additional storm water sewers, own forces. **$31,500.** City Eng. Dpt., c/o owner, engr. CD 2/25—ENR 2/27.

Tex., Marlin—Storm sewerage sys., 2 mi. pipe. **WPA. $89,407.**

Tex., Palestine—R. H. McLeod, mayor, sanitary and storm sewer extens., imprvs., **WPA. $55,000.** S. R. Buchanan, Palestine, engr.

Tex., Princeton—Imprv. sanitary sewerage sys. **WPA. $58,361.**

Tex., Three Rivers—J. K. Montgomery, mayor, complete sewerage collection and disposal sys., primary and secondary treatment with rock-aero filter, sludge digestion and drying beds, **WPA. $50,000.** M. C. St. John, 4101 Polk St., Houston, engr.

Va., Virginia Beach—Garbage incinerator, to Nye Odorless Incinerator Co., Macon, Ga. Est. **$50,000.** W. Elliott, mayor.

Wis., Marshfield—E. Olson, city clk., sanitary sewers. **WPA. $51,906.**

BRIDGES, GRADE CROSSINGS

PROPOSED WORK

Arkansas—State Hy. Dpt., Little Rock, overpass over Rock Island tracks. $140,000. W. W. Zass, Little Rock, engr.

Calif., Sacramento—State, 4 lane viaduct, 1,496 ft. long, consisting 36 spans of 41 ft., with 10 ft. cantilever span at each end, 4 lane divided hy., etc. over American River Flood Control project over American River overflow area on Del Paso Blvd. between Sacramento and North Sacramento. C. H. Purcell, P. Wks. Bldg., Sacramento, state hy. engr.

Fla., Jacksonville—State Road Dpt., Tallahassee, high concrete bridge to replace 2 steel draw bridges over Ortega River, on State Rd. 343. W. H. Dowling, Tallahassee, state hy. engr.

Fla., Jacksonville—Bd. Comrs. Duval Co., Jacksonville, additional bridge over St. Johns River. Over $25,000. A. N. Sollee, co. engr.

Illinois—State Dpt. P. Wks. & Bldgs., Div. Hys., Springfield, highway overhead at tracks of I. C. R.R. and F.A. Route 163, at point on Edgewood-Metropolis line of railway. E. Lieberman, Centennial Bldg., Springfield, ch. state engr.

N. J., Newark—Essex Co., Hall of Records Bldg., concrete, steel bridges for flood control. $50,000. W. Stickel, Hall of Records Bldg., engr.

N. Y., Brooklyn—Dpt. P. Wks., Municipal Bldg., New York, impry. Brooklyn Bridge and Brooklyn Bridge Plaza. Over $150,000.

N. Y., Buffalo—Dpt. P. Wks., City Hall, bridge over canal at foot of Porter Ave. Over $25,000. L. A. Harding, comr. P. Wks.

Oklahoma—State Hy. Dpt., Oklahoma City, preliminary plans new concrete, I-beam bridge, U.S. 59, south of Afton, Ottawa Co., $27,500; new concrete, I-beam bridge over Sycamore Creek, Ottawa Co., $52,000. V. T. Moon, state engr.

Pa., Altoona—City, F. Hunter, councilman in charge, bridge repairs, imprvs., involving 20 or more bridges over tracks of Penna. R.R., various locations, over $50,000; concrete, steel hy. bridge over Penna. R.R. tracks, over $50,000. B. Schwan, city engr.

Pa., Scranton—Dpt. P. Wks., W. A. Schunk, dir., City Hall, steel or steel, concrete arch bridge, E. Market St. Over $100,000. F. K. Derby, city engr.

Pa., Scranton—Dpt. P. Wks., W. A. Schunk, dir., City Hall, covered culvert W. Market St. over Leggett's Creek, also same near Wales St. Over $25,000. F. K. Derby, city engr.

Washington—State Hy. Dpt., Olympia, bridge over Nooksack River between Deming and Van Zant. $150,000. J. A. Davis, Olympia, acting State Hy. dir.

Wash., Everett—Great Northern Ry. Co., 175 E. 4 St., St. Paul, Minn., C. M. Nye, ch. engr., two additional 180 ft. span bridge over Snohomish River. $207,600.

Wash., Everett—State Hy. Dpt., Olympia, J. A. Davis, acting hy. dir., 150 ft. additional spans on Stevens Pass Hy. bridge over Snohomish River at Hewitt St. $277,600.

Wis., Arpin—Wood Co., Wisconsin Rapids, bridge over Mill Creek on County Hy. M. $30,000. R. Brayback, co. hy. comr.

BIDS ASKED

Bids Asked March 10

N. Y., New York — President Manhattan Boro, Municipal Bldg., East River Dr. imprvt., E. 49 to E. 99 Sts., Contr. 19. Pedestrian overpass with ramps complete at south curb line, E. 71 St. PWA.

Bids Asked March 11

Ill., Freeport—Stephenson Co., 4 span continuous steel I-beam bridge, exten. existing truss bridge across Pecatonica Rier, Sect. 19-2B-2MFT. G. H. Baker, Centennial Bldg., Springfield, state engr. co. roads and city streets.

Ill., Winslow—Stephenson Co., 207 ft. span, 4 span steel I-beam bridge over Pecatonica River, O. G. Hively, Freeport, engr.

Bids Asked March 14

Ill., Danville—Vermilion Co. removal existing bridge floor new open steel floor, cleaning, painting existing steel superstructure, Sect. LB-2-MFT. G. H. Baker, Centennial Bldg., Springfield, state engr. co. roads and city streets.

Bids Asked about March 15

S. C., Pinopolis—Atlantic Coast Line R.R., J. E. Willoughby, ch. engr., Wilmington, N. C., railroad bridge over Cooper River Tail canal of Santee-Cooper Project, near here, incl. constructing temporary bridge to be used during constructtion of new bridge. CD 12/27—ENR 1/2.

Bids Asked March 17

†Tenn., Knoxville—Tennessee Valley Auth., Knoxville, furnishing steel superstructures for I. C. R.R. bridge over Kentucky Dam powerhouse and spillway; adv. ENR 3/6.

Bids Asked March 18

Wisconsin — State Hy. Comn., Madison, Bridge 769, 962 ft., with five deck truss spans and 3 I-beam spans, Monomonie-Eau Claire Rd., U.S. Hy. 12 (Belt Line), Rd. SN-FAP 881-C(3), U.S. Hy. 12, Eau Claire Co.; Bridge 772, three span continuous type, Menomonie Eau Claire Rd., U.S. Hy. 12 (Belt Line) Rd., Eau Claire Co.; structure maintenance painting Maintenance Project M-12, Delton Bridge, U.S. Hy. 12 and S.H. 13, Sauk Co.; Bridgeport Bridge, U.S. Hy. 18 and S.T. Hy. 35, Grant and Crawford Counties.

Ontario—R. M. Smith, deputy minister Dpt. Hys., Parliament Bldg., Toronto, underpass at Brock St. and at Thickson Side Rd., Toronto, $45,000; underpass at Highland Creek at Brumwell Side road at Lansing, at Rosebank side road at Liverpool, and at Dunbarton, $150,000, for Province of Ontario, Toronto.

Bids Asked March 20

★**Ill., Chicago**—O. E. Hewitt, comr. P. Wks., substructure double leaf trunnion bascule bridge over Chicago River at North State St. Total est. about $3,000,000; adv. ENR 3/6, CD 2/26.

Bids Asked March 21

New Jersey—E. D. Sterner, comr. State Hy. Dpt., Trenton, grade crossing elimination on D., L. & W. R.R. at Danforth Rd., in Madison Boro, Morris Co.; roadside imprv. 1.766 mi. Route 28-24 connecting link, Sect. 2, from Straw Church to Route 24, Warren Co.; adv. ENR 3/6.

New York — Comrs. Parks, Dept. Parks, Arsenal Bldg., Central Park, 5 Ave. and 64 St., New York bridge over Grand Central Parkway from Ditmars Blvd. to La Guardia Airport, 23 Ave., Queens Boro, Contr. Q-A-G-5526.

LOW BIDDERS

Indiana — State Hy. Comn., Indianapolis, Feb. 25, 2 bridges, Marshall Co., from Bontrager Constr. Co., 618 Indiana Ave., Elkhart, **$27,761** est. $31,907***2 bridges, Rush Co., from W. C. Scheirer, Frankfort, **$99,313** est. $105,550***2 bridges, Lake Co., from A. C. Rehm, Oak Park, Ill., **$82,421** est. $91,726***2 bridges, Porter and Jasper Counties, from L. & K Contg. Co., Wabash Ave., Terre Haute, **$81,244** est. $86,943. CD 2/13—ENR 2/20.

Kentucky—State Hy. Dpt., Frankfort, Feb. 28, substructure and superstructure Severn Creek Bridge, Owen Co., from Shields Constr. Co., Lexington, **$47,799**; bridge 3.314 mi. hy., Pike Co. from Gay-Coleman Constr. Co., Lexington, **$28,688.** CD 2/10—ENR 2/13.

Missouri — State Hy. Comn., Jefferson City, Feb. 24, continuous plate girder spans over Missouri, Kansas & Texas R.R. and Salt Creek, Howard Co., from Carrothers & Crouch, 7449 Bway., Kansas City, Mo. **$106,272.** CD 2/10—ENR 2/13.

New Jersey—E. D. Sterner, comr. State Hy. Dpt., Trenton, Feb. 28, grade crossing elimination on Central Railroad of New Jersey, Middlesex Co., from Hogan-Gaul Constr. Co., P. O. Box 247, Red Bank, **$209,980**; 2 spans rein.-con. bridge, over Game Creek, Salem Co., from J. Rafferty, Haddon Heights, **$39,665.** Rejected bids 2/28, Raccoon Creek Bridge and approaches on Woodbury-Auburn Rd., Gloucester Co., will readvertise. CD 2/10—ENR 2/13.

New York—Chief Engineer Dpt. P. Wks., State Office Bldg., Albany, Feb. 25, raising Barge Canal Bridge 43, Contr. U.S. 50, Utica-Oneida Co., from Richard Hopkins Co., P. O. Box 1025, Albany, **$47,444.** Est. $47,671. CD 2/4—ENR 2/6.

Pa., Scranton—Dpt. P. Wks., W. A. Schunk, dir., City Hall, structural steel, rein.-con. arch bridge over Lackawanna River and Delaware & Hudson and Central R.R. of N. J. tracks, Lackawanna Ave., from De Wilde & Schwartz, 105 Middle St. **$128,482.** Bids Jan. 14 rejected. CD 1/17—ENR 1/23.

Texas—D. C. Greer, engr. State Hy. Dpt., Austin, overpass F. W. & D. C. R. R and relocation, etc. Donley Co. from C. K. Howard & Co., 616 Majestic Bank Bldg., Oklahoma City, Okla. **$74,626.** Est. $74,000. CD 2/18—2/20.

CONTRACTS AWARDED

★**Fla., Bradenton**—Longboat Bridge Co., c/o E. M. Elliott, 113 Main St., Sarasota, 2 bridges over Sarasota Pass and Longboat Pass, force account. **$1,500,000.** Robinson & Steinman, 117 Liberty St., New York, N. Y., engrs. CD 11/7—ENR 11/14, giving Bradenton Co., Box 294, as owners.

Kansas—State Hy. Dpt. at office Co. Clk., Hutchinson Bridge 11.1, continuous steel beam spans, FA 302 H, Edwards Co., to Geiger & Rutherford, Leavenworth, **$59,766.** Bids 2/4 awarded 2/26. CD 1/22—ENR 1/30.

Ky., Morgan—Pendleton Bridge Corp., Falmouth, 3 span, steel, concrete bridge over Licking River, to A. Lyons, Rogersville, Tenn. **$43,983.** Est. $50,000.

Wyoming—State Hy. Comn., F. Kelso, supt., Cheyenne, one 1-beam span, 4 treated timber and 1 rein.-con. span bridges, etc. Campbell Co., to E. E. Peterson, Casper, **$62,745.** Bids 2/25. CD 2/14.

Que., St. Hubert—Canadian National Ry., A. B. Ferguson, ch. engr., 360 McGill St., Montreal, concrete abutments, subway under Canadian National R. R. tracks, to Duranceau & Duranceau, Ltd., 5847 Hamilton St., Montreal. Total est. **$60,000.** CD 12/4—ENR 12/12.

STREETS AND ROADS

BIDS ASKED

Bids Asked March 11

N. J., Irvington—FA-BG 1 surface upon existing concrete fdn., Myrtle Ave. Sect. 2, I. J. Casey, Jr., Town Hall, engr.

West Virginia—State Road Comn., Charleston, grading, draining, concrete paving 6.173 mi. Washington St.-Kanawha Blvd. Connection, Kanawha Co.